

FIG. 1

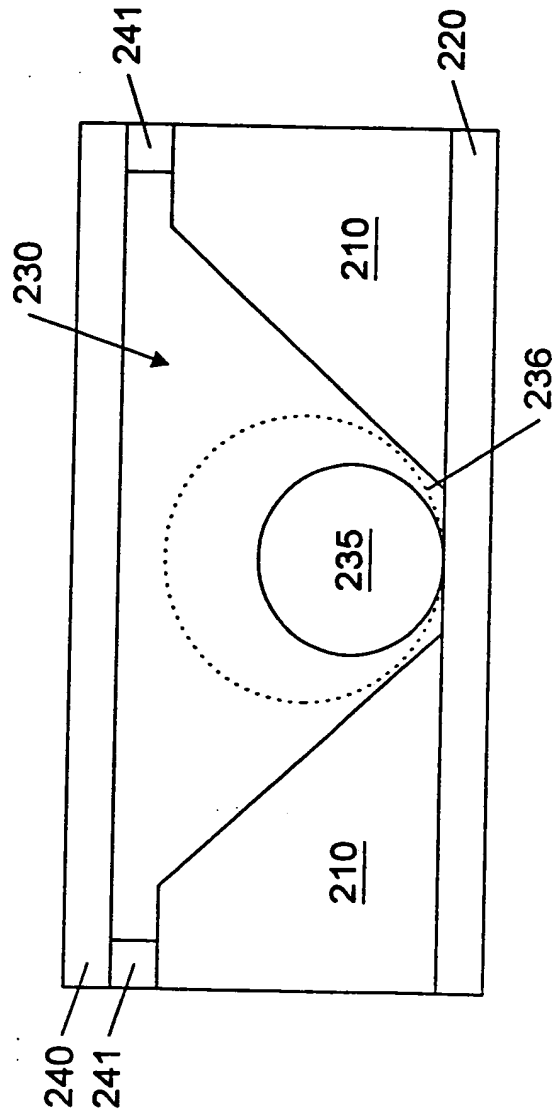


FIG. 2

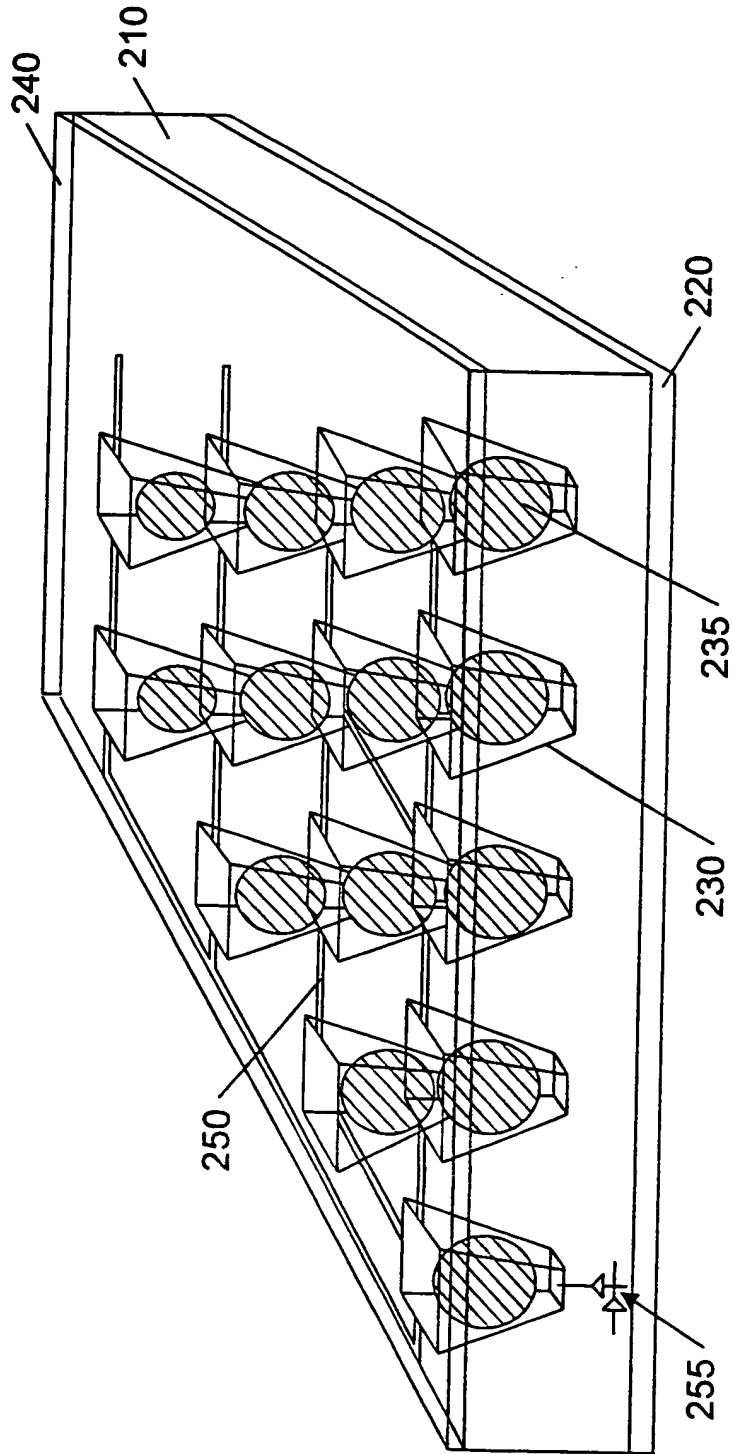


FIG. 3

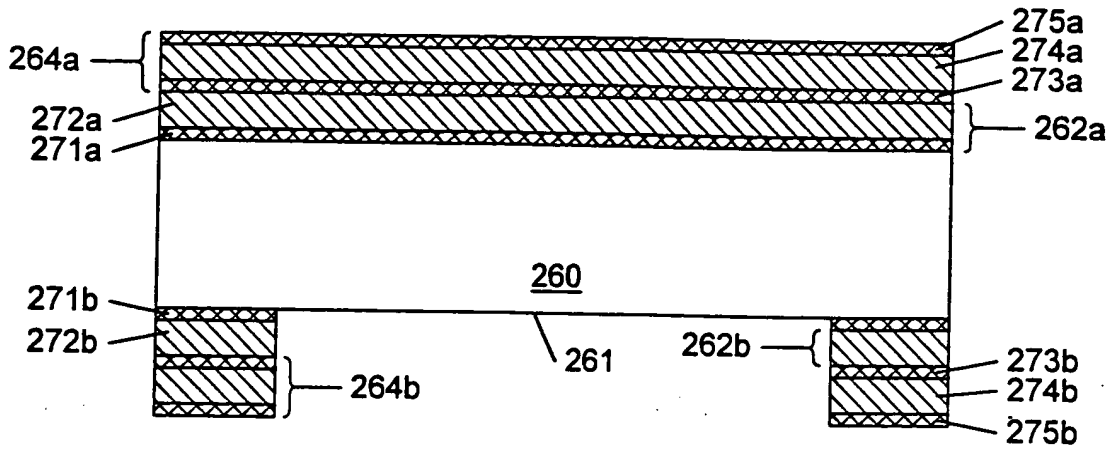


FIG. 4A

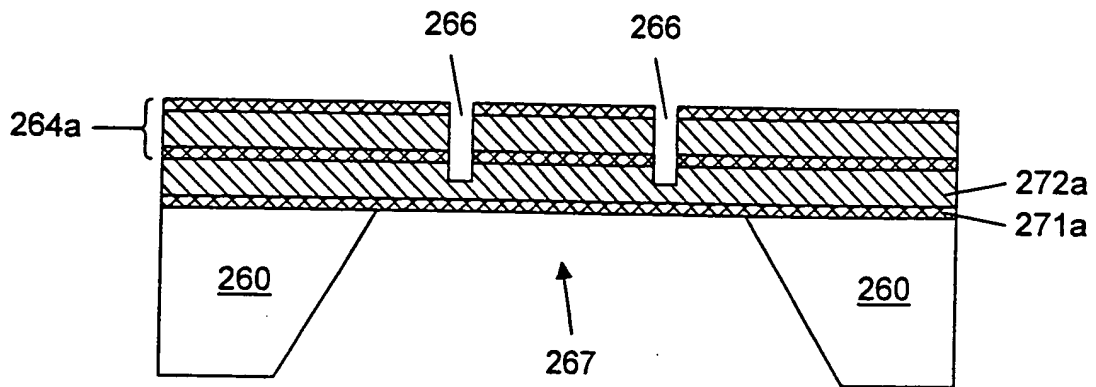


FIG. 4B

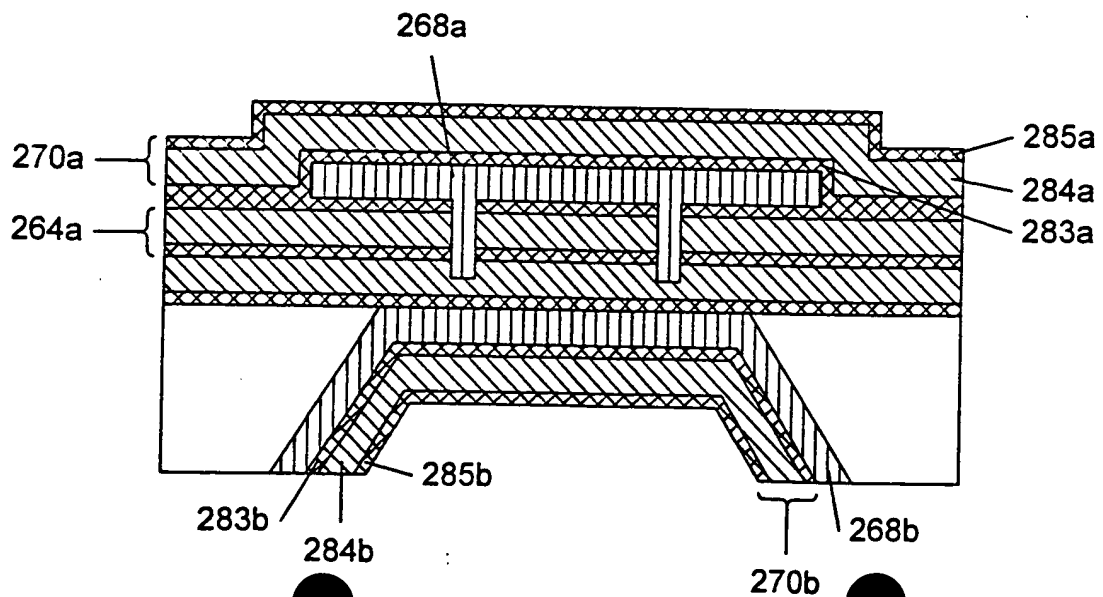


FIG. 4C

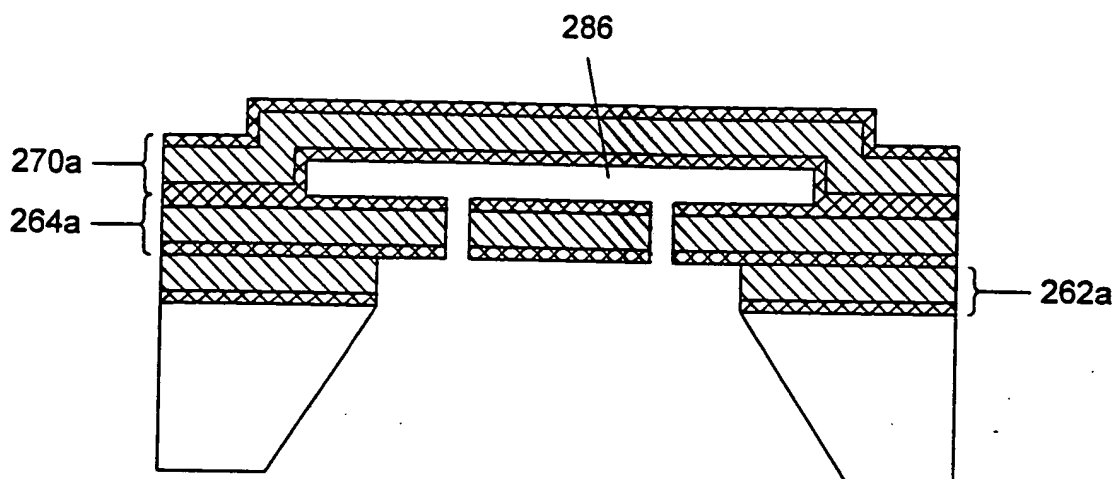


FIG. 4D

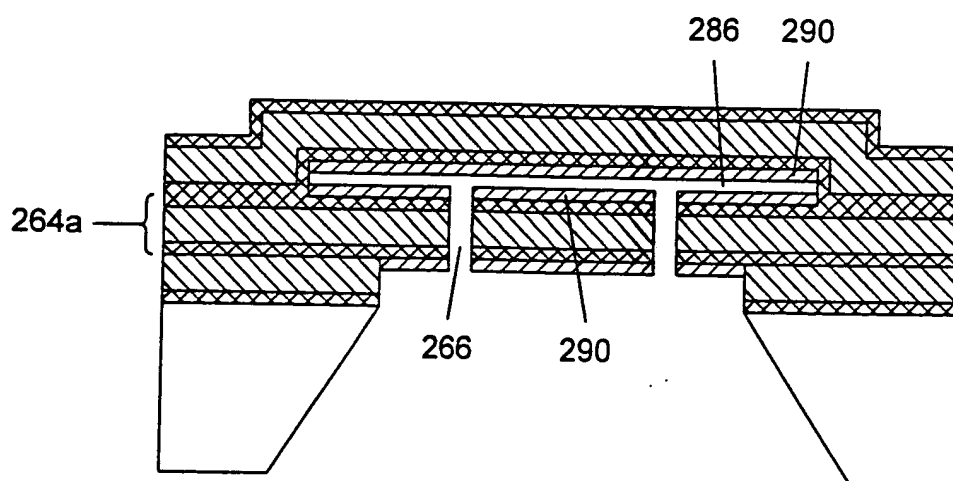


FIG. 4E

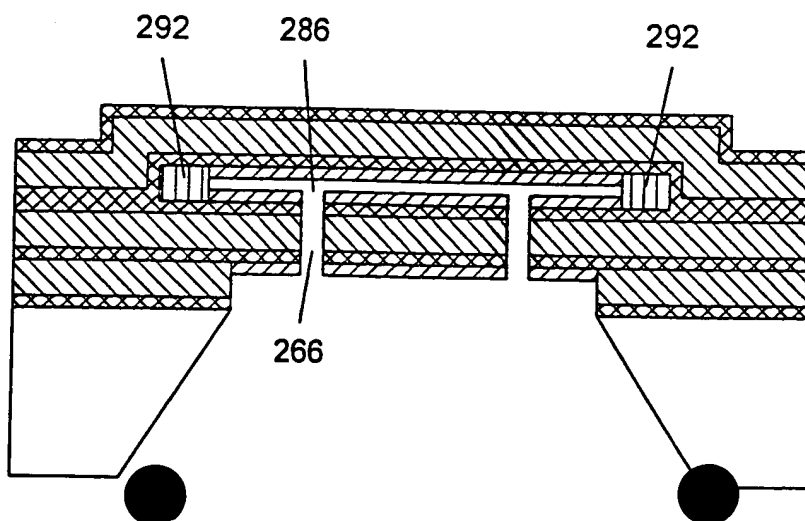


FIG. 4F

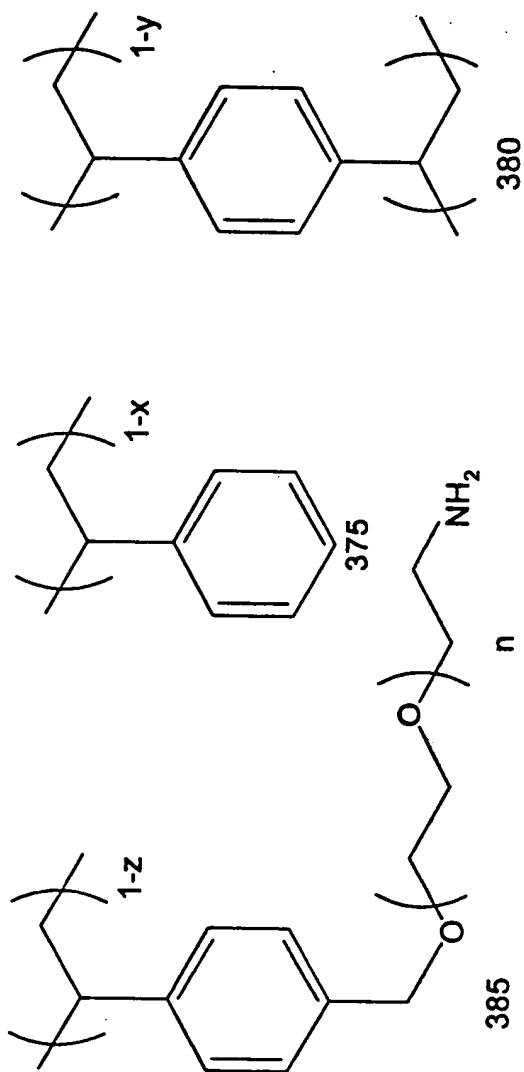


FIG. 5

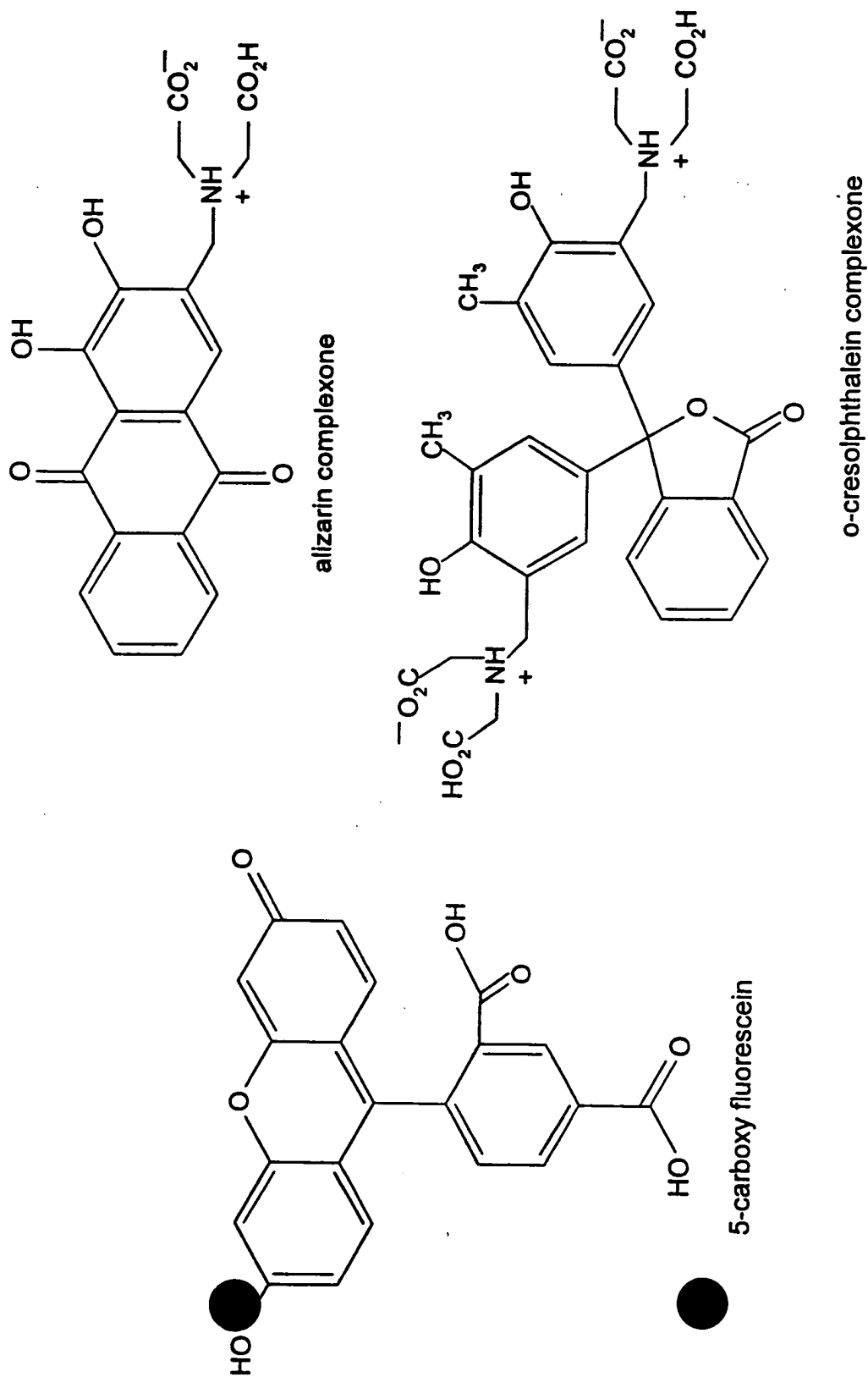


FIG. 6

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0.0001 0.0002 0.0004 0.0006 0.0008 0.001

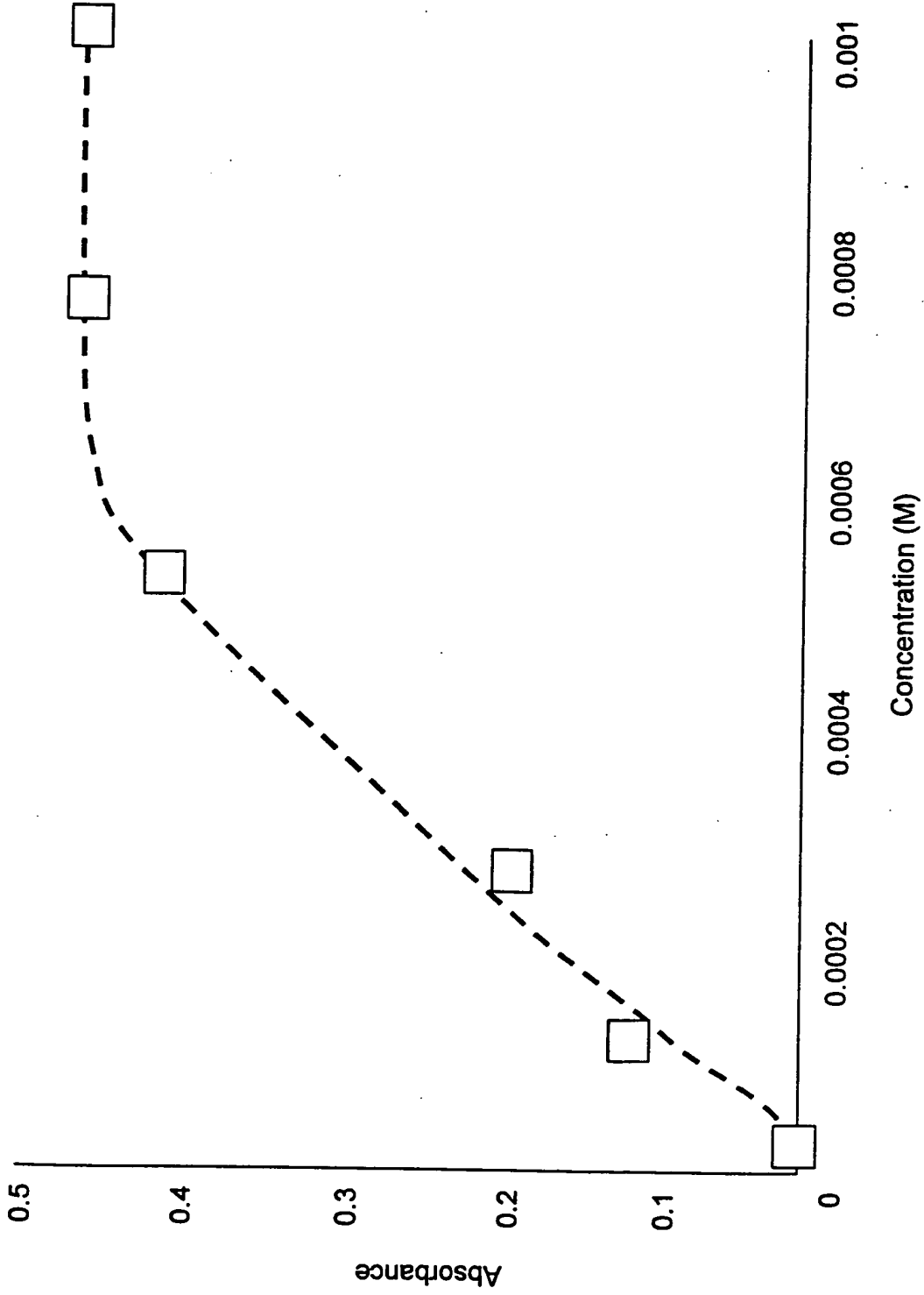


FIG. 7

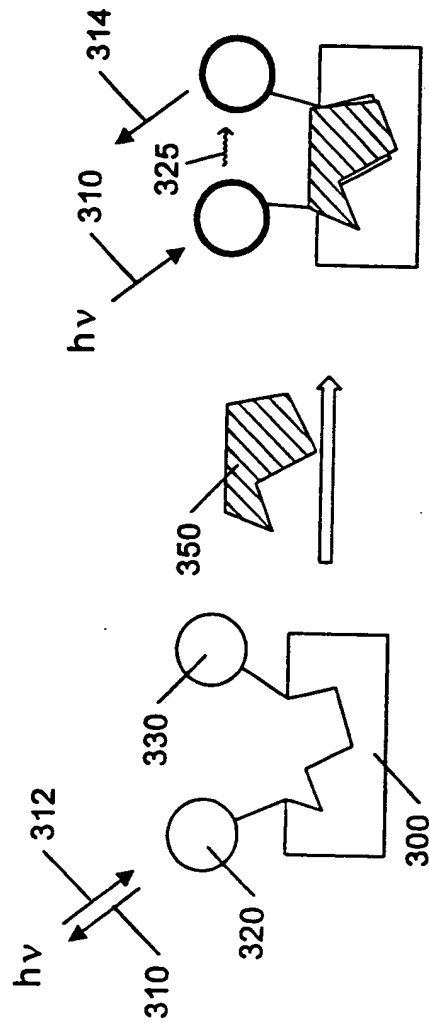


FIG. 8

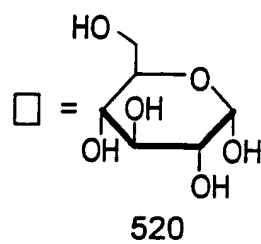
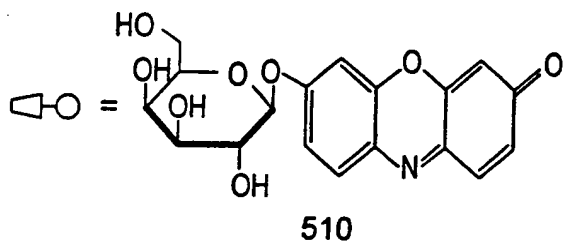
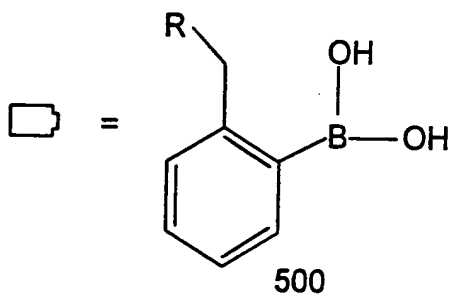
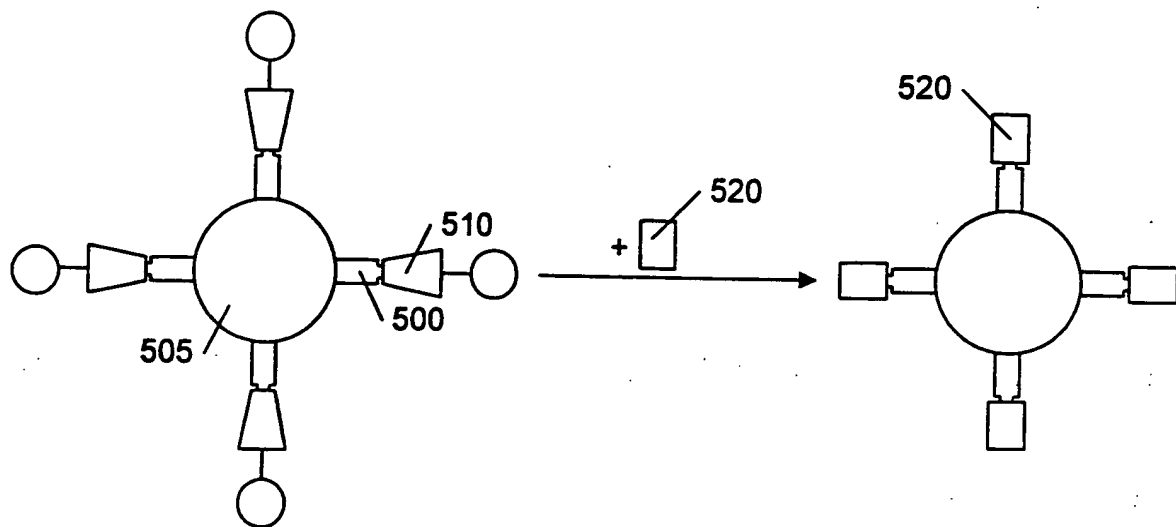
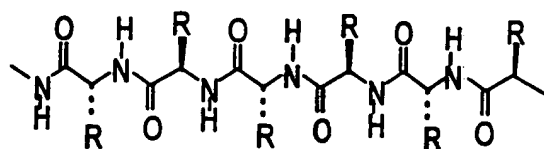
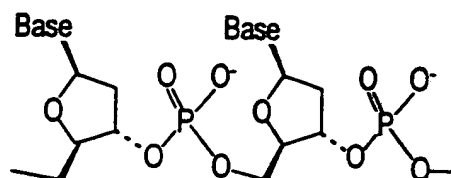


FIG. 9

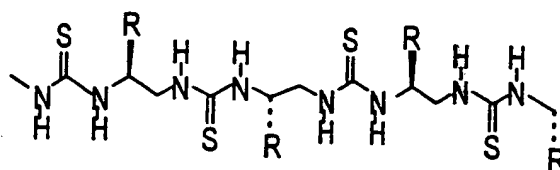
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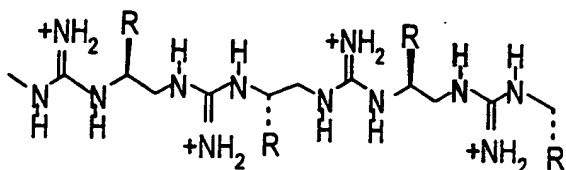
Peptides



Nucleotides



Polythioureas



Polyguanidiniums

FIG. 10

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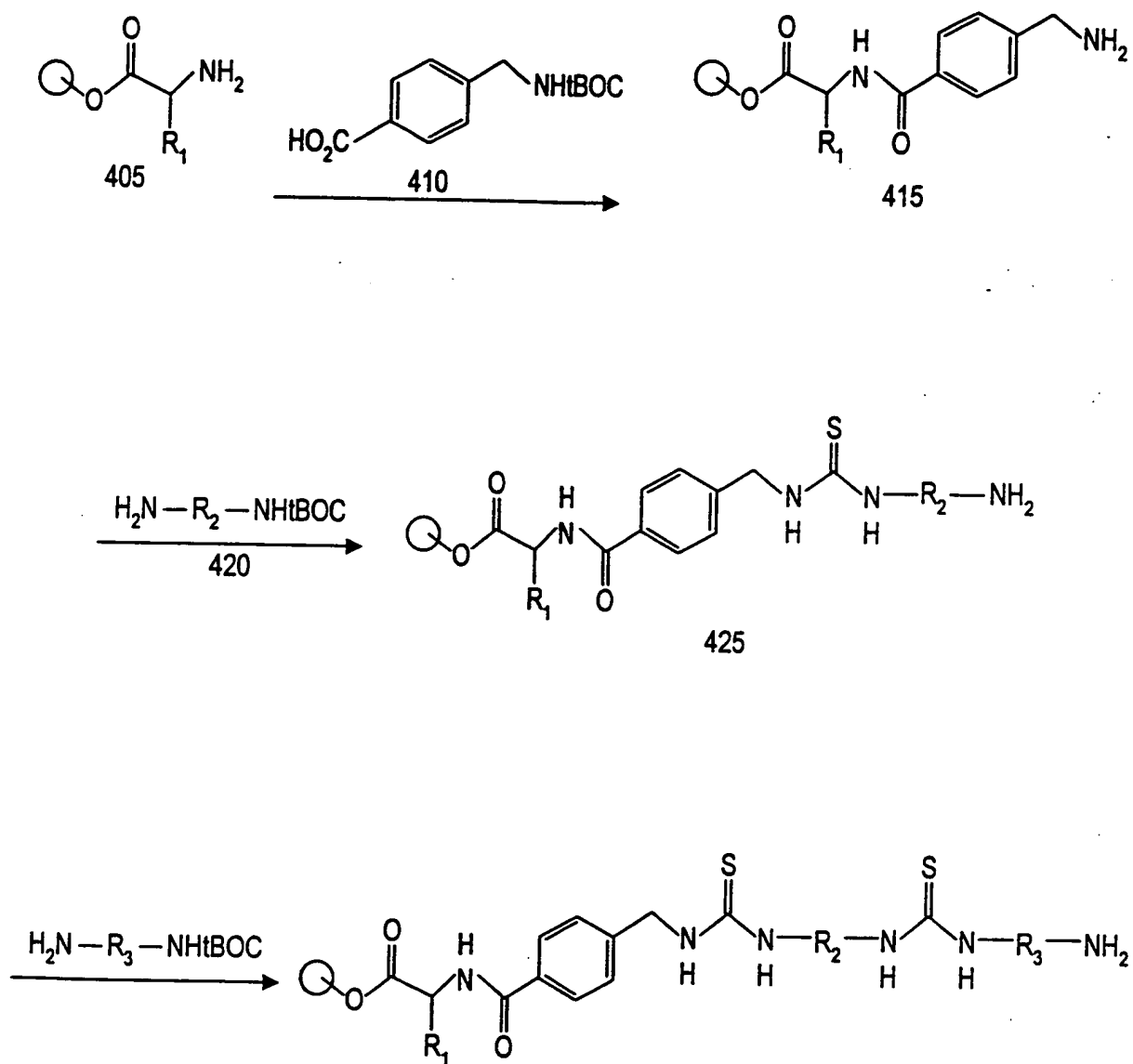


FIG. 11

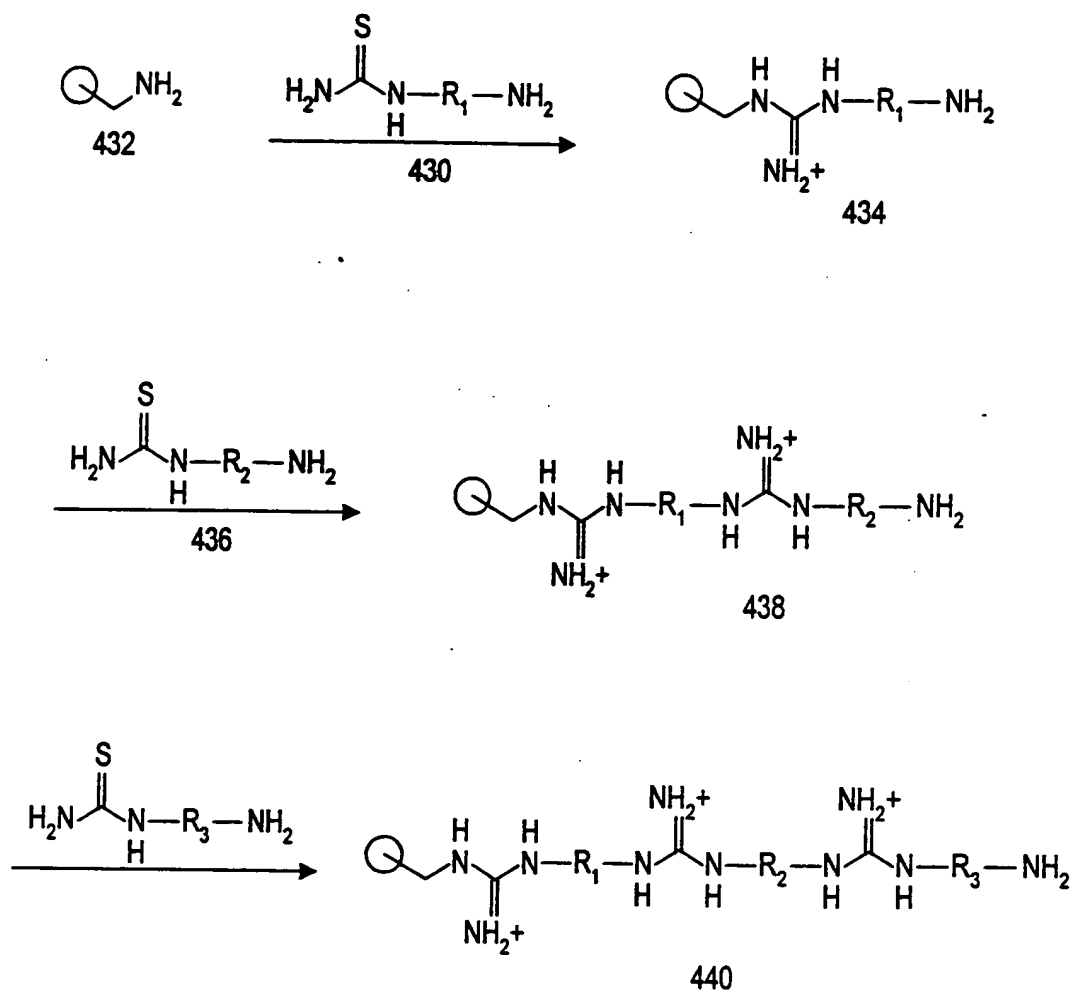


FIG. 12

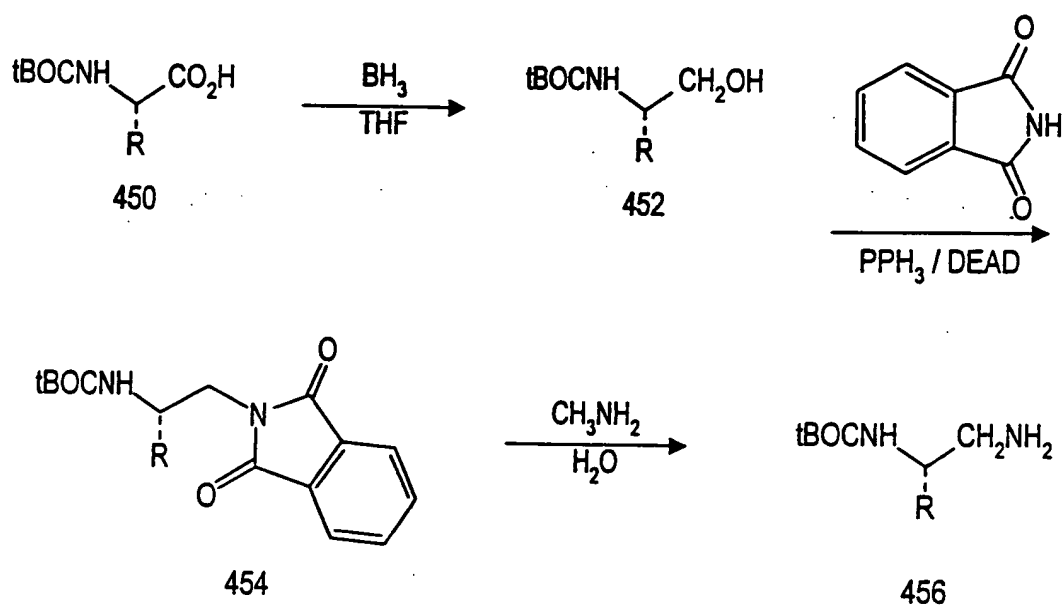


FIG. 13

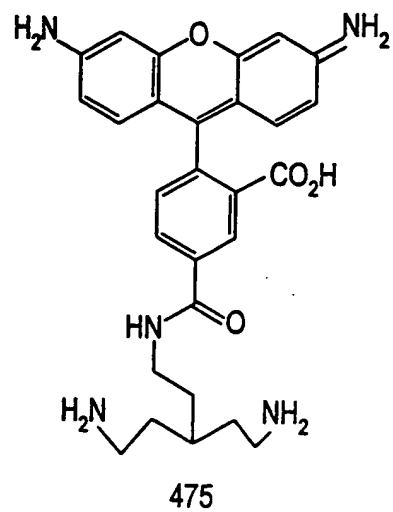
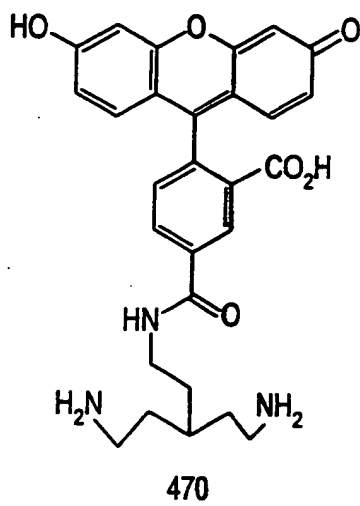


FIG. 14

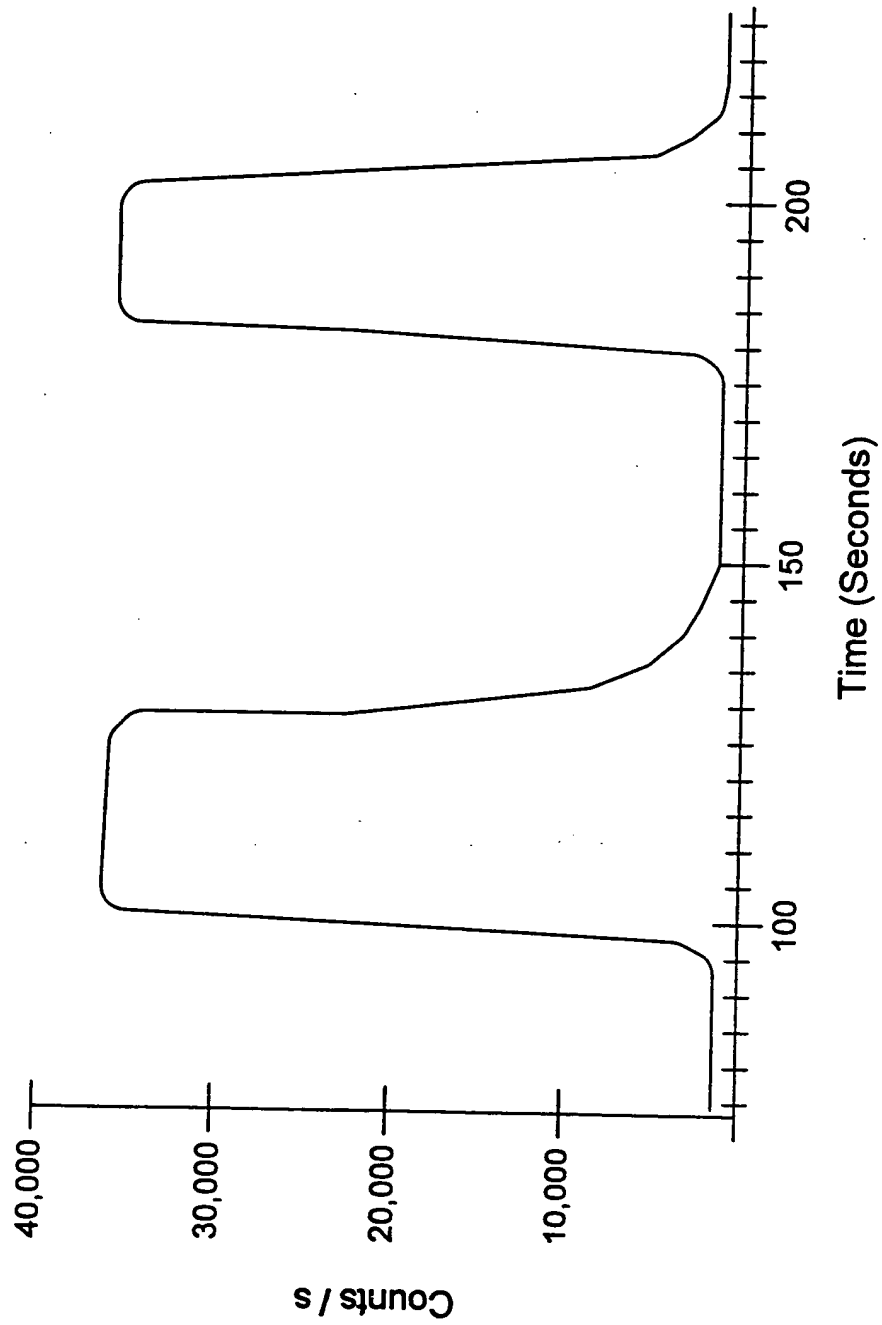


FIG. 15

RESIN: pH Ion		Blank	Alizarin	o-Cresol- phthalein	Fluorescein	Alizarin-Ce ³⁺ complex
2	none					
2	Ca ²⁺					
7	none					
7	Ca ²⁺					
7	F ⁻					
12	none					
12	Ca ²⁺					
12	F ⁻					

FIG. 16

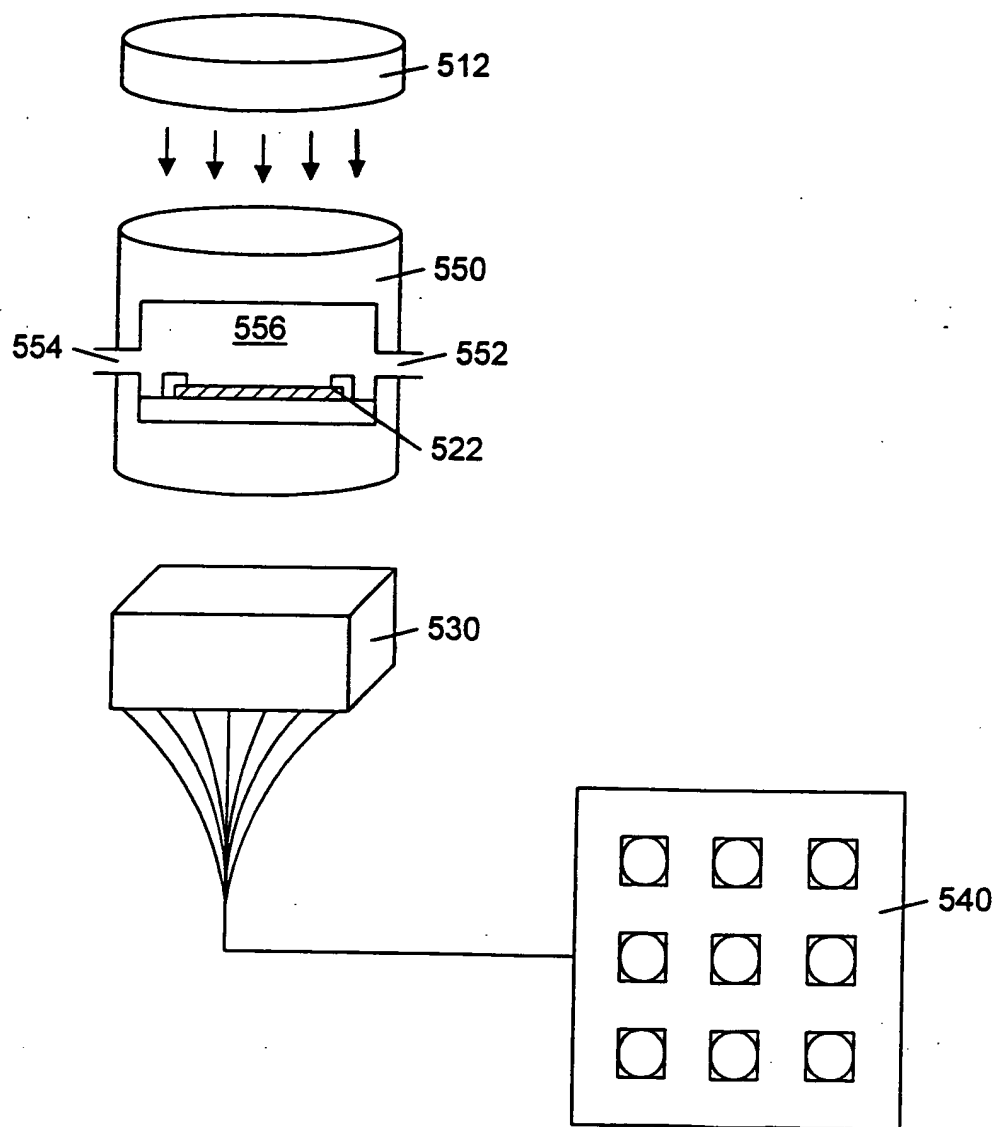


FIG. 17

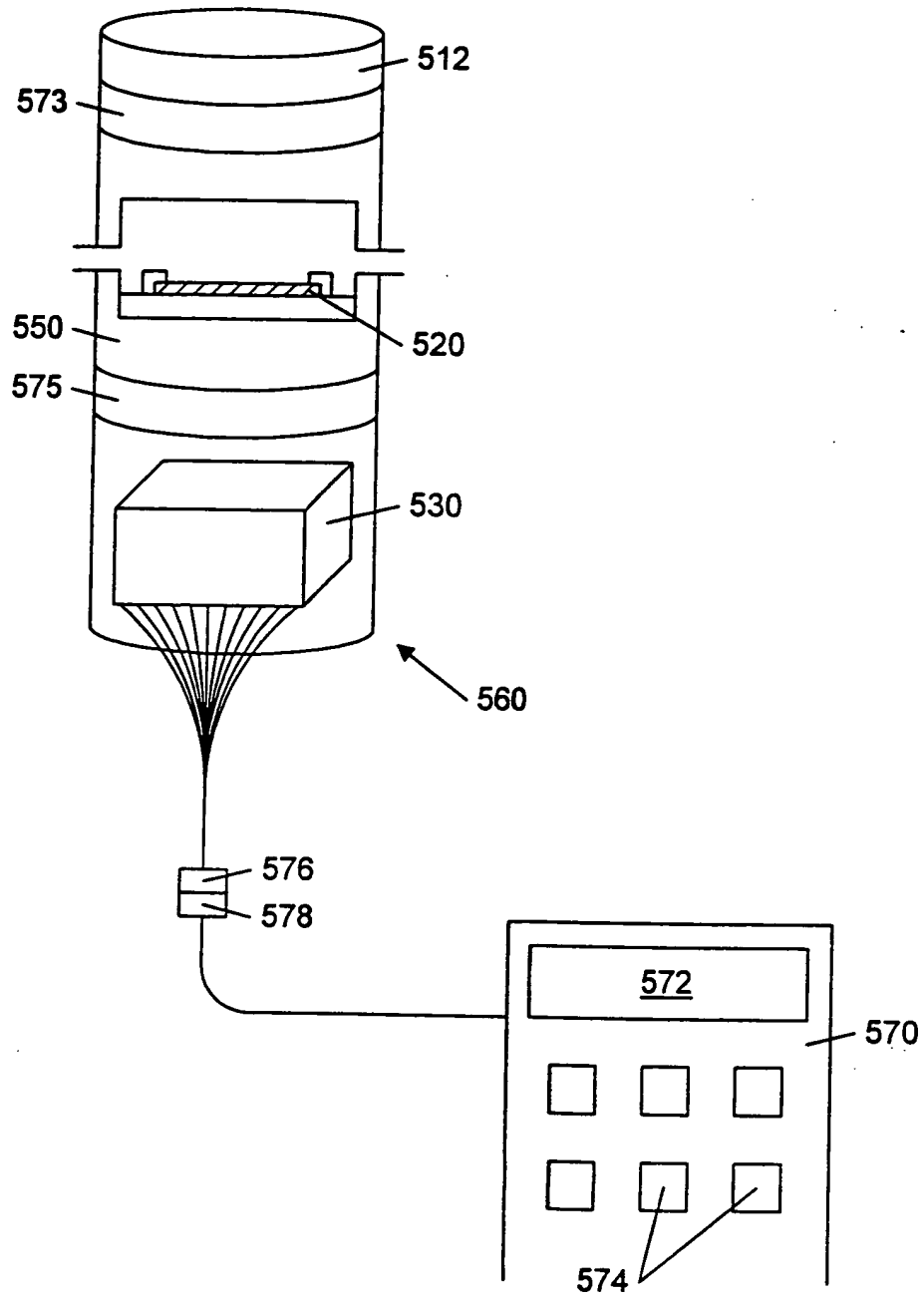


FIG. 18

FIG. 19

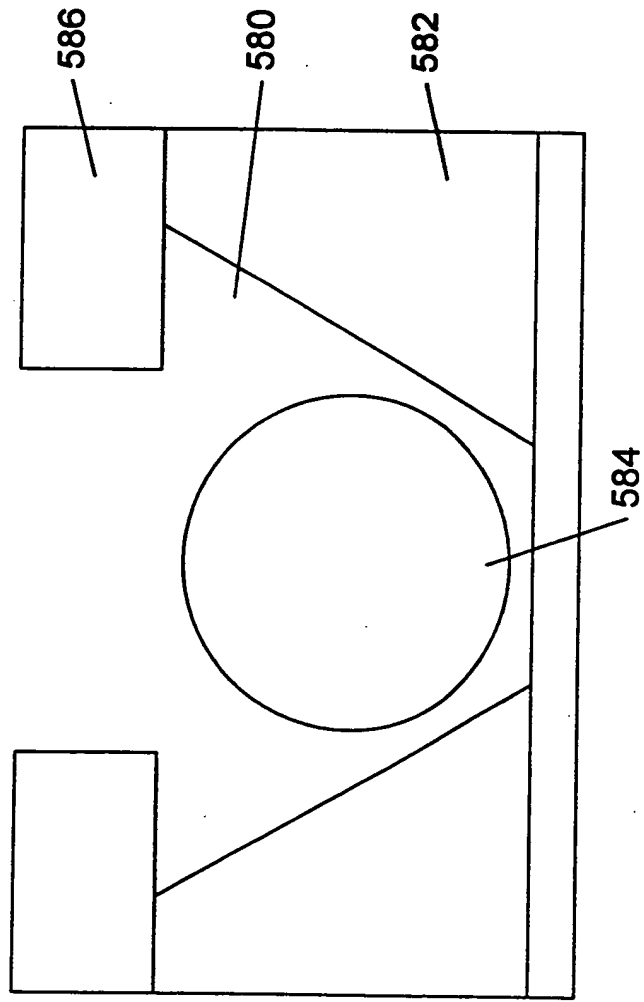


FIG. 19

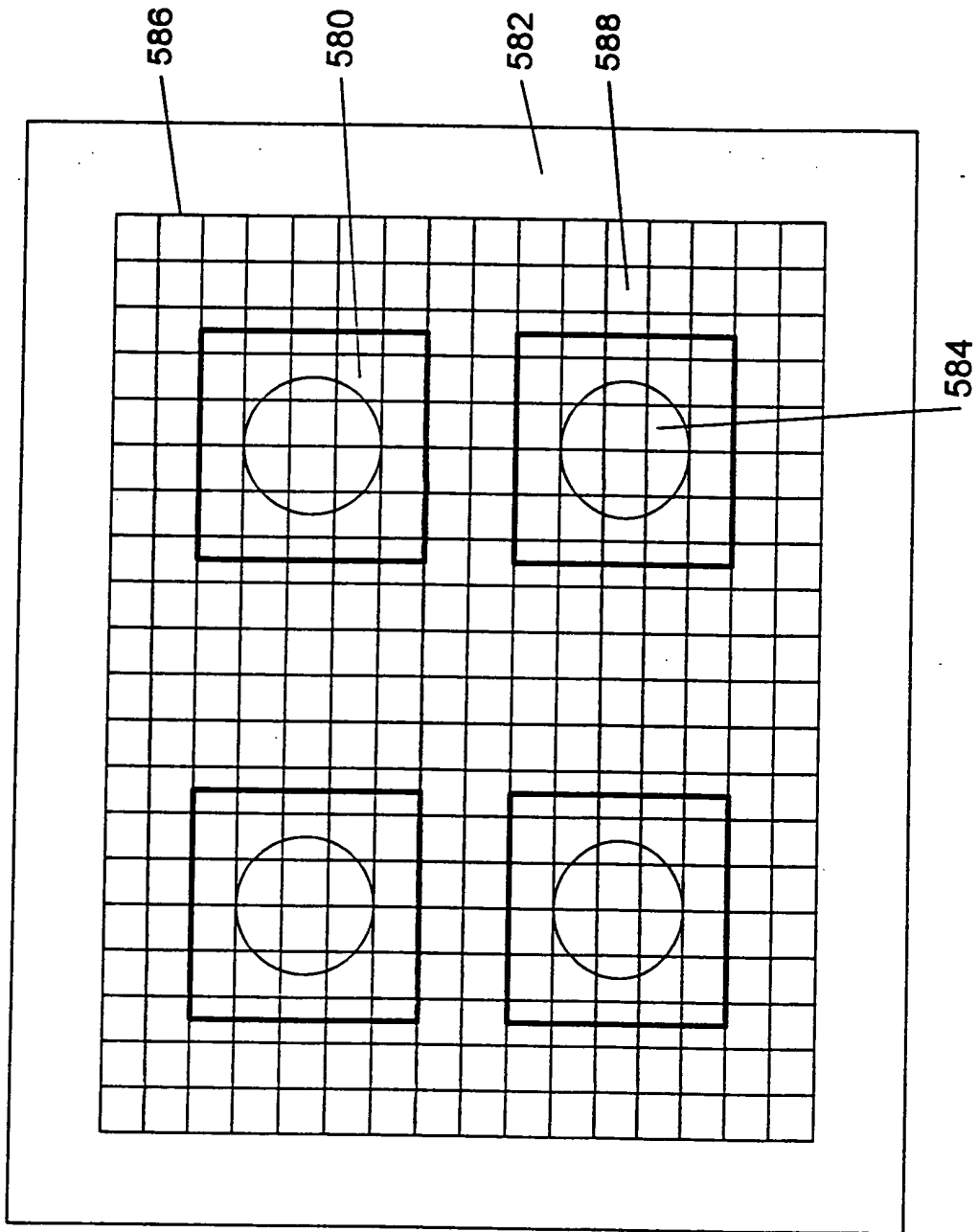


FIG. 20

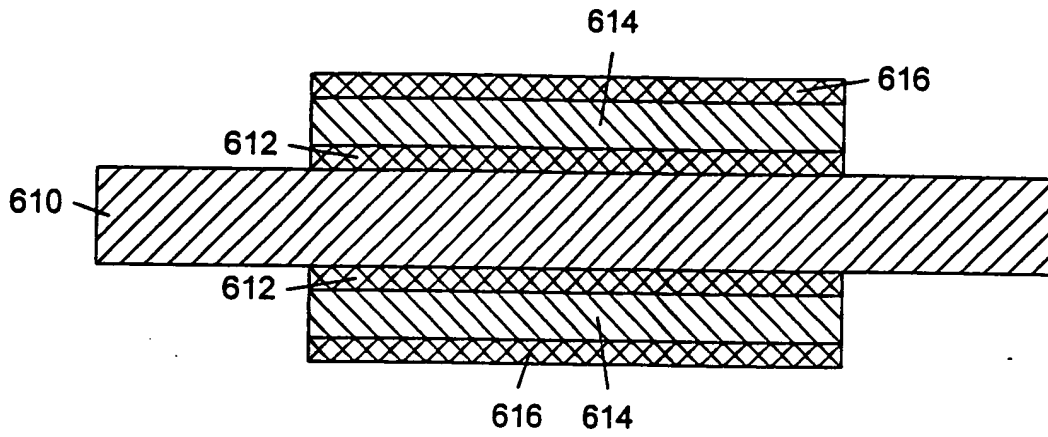


FIG. 21A

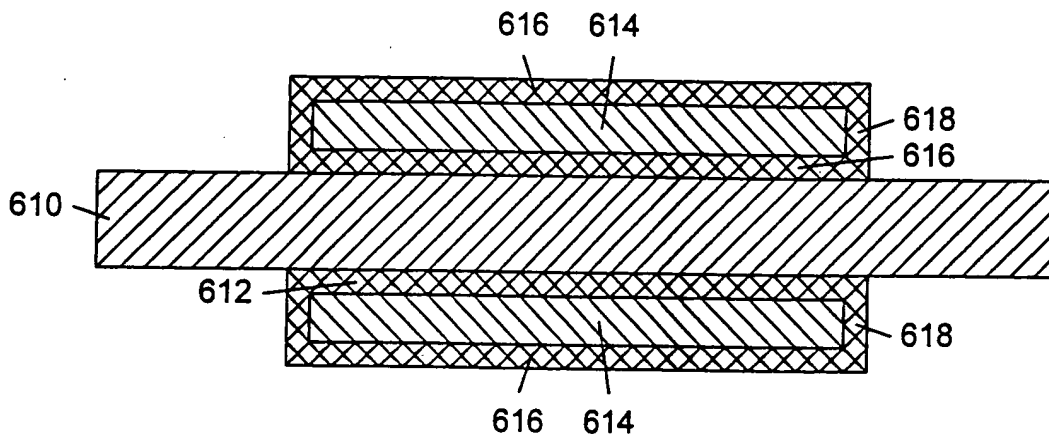


FIG. 21B

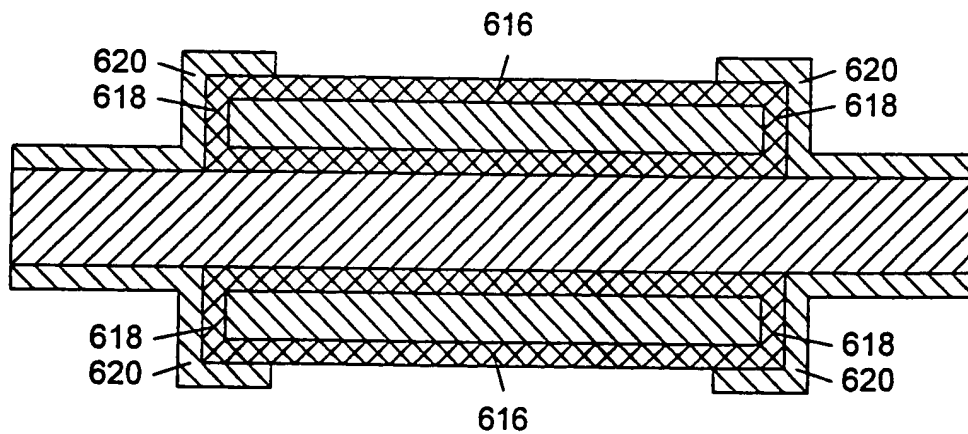


FIG. 21C

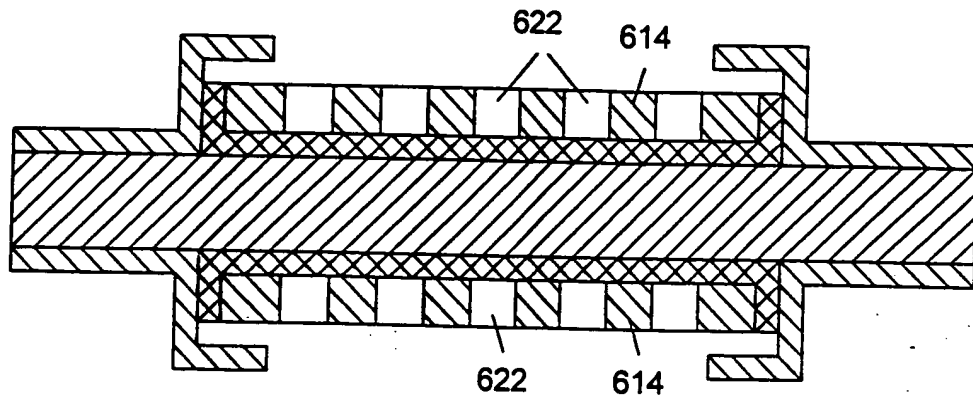


FIG. 21D

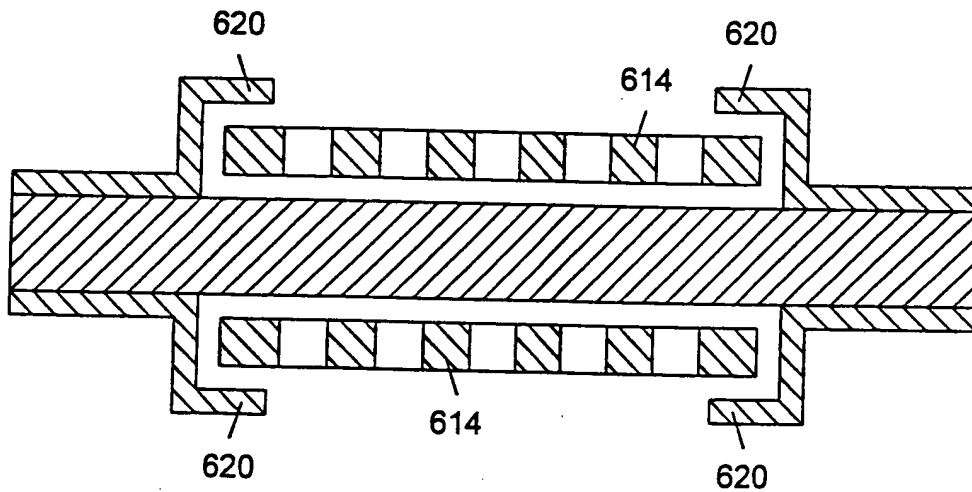


FIG. 21E

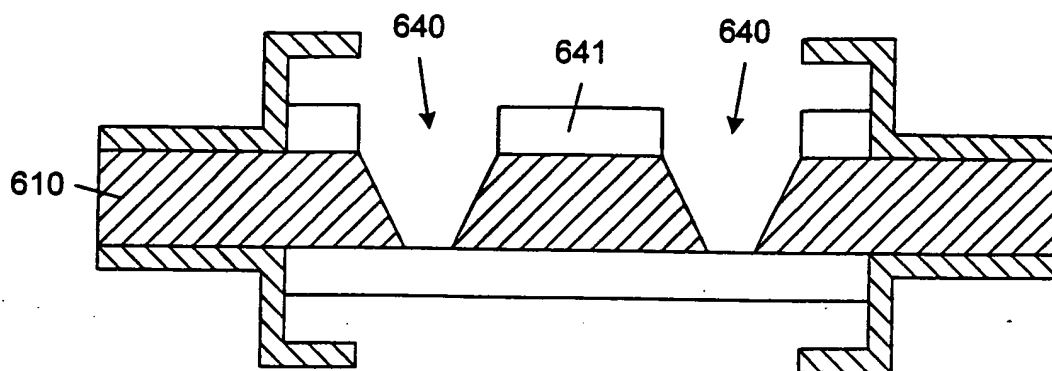


FIG. 21F

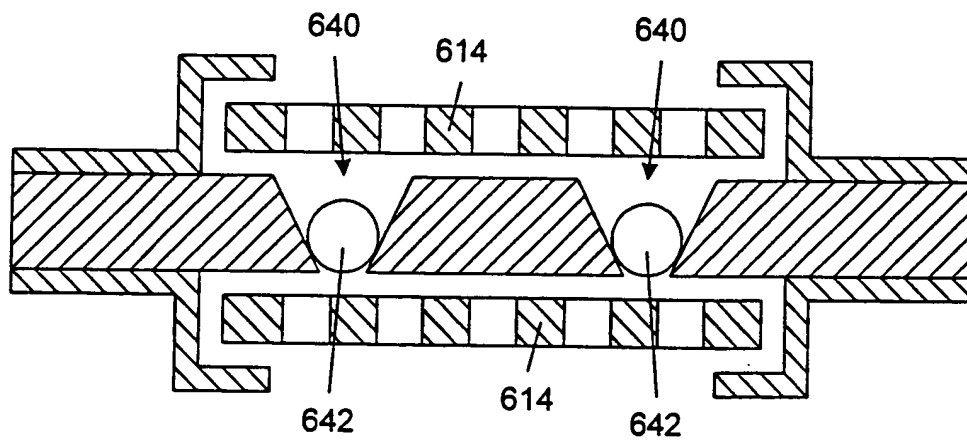


FIG. 21G

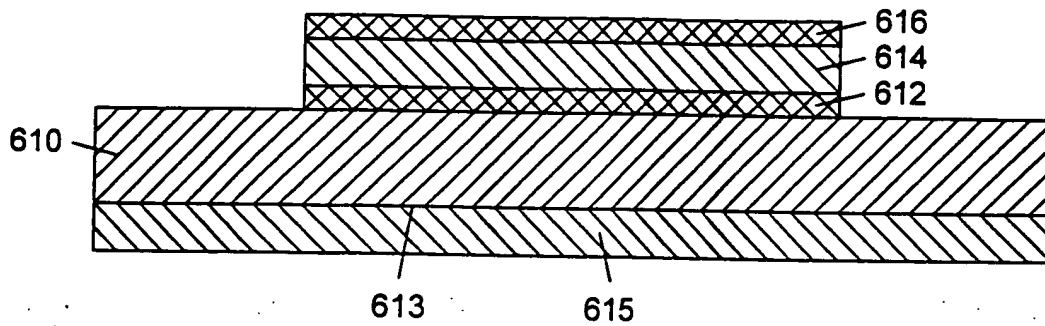


FIG. 22A

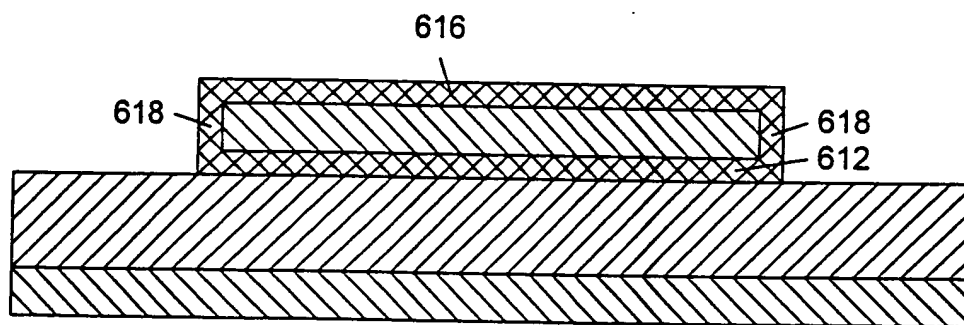


FIG. 22B

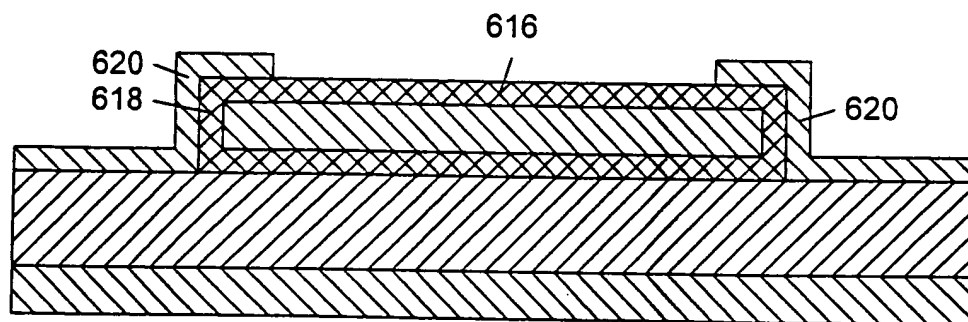


FIG. 22C

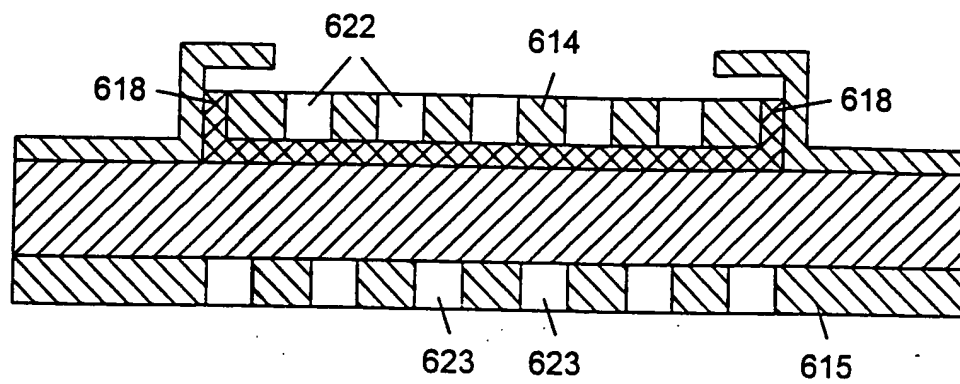


FIG. 22D

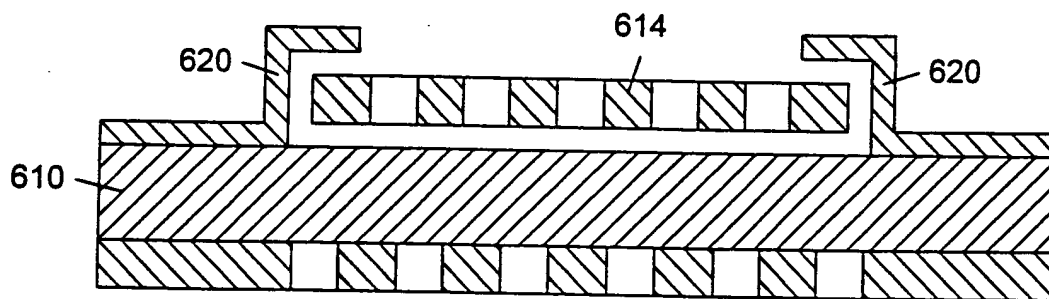


FIG. 22E

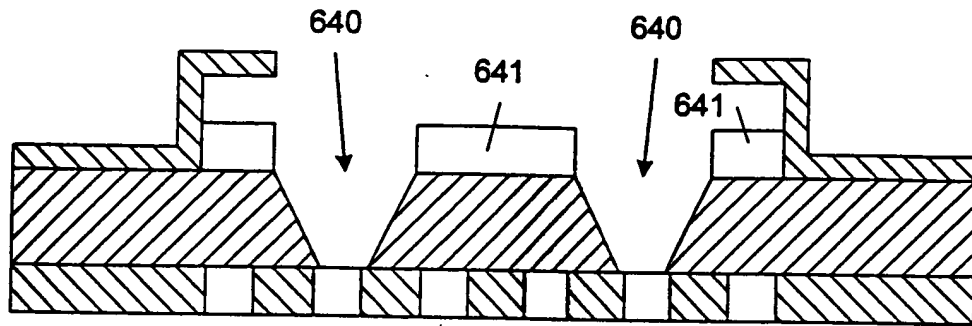


FIG. 22F

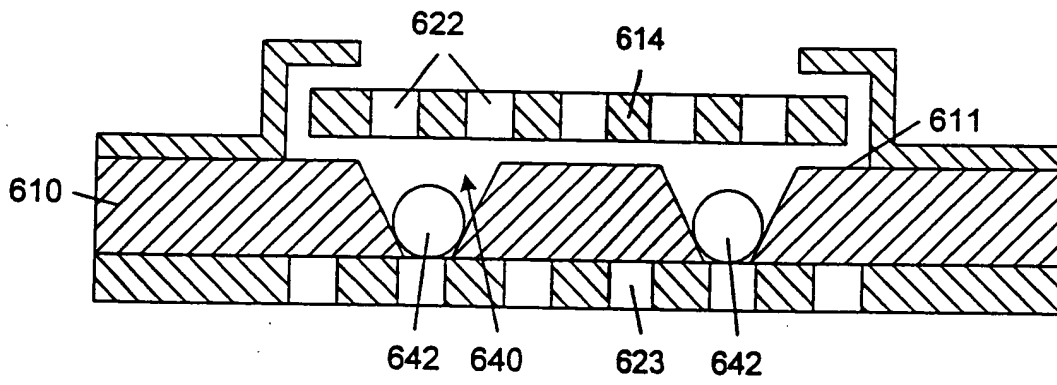


FIG. 22G

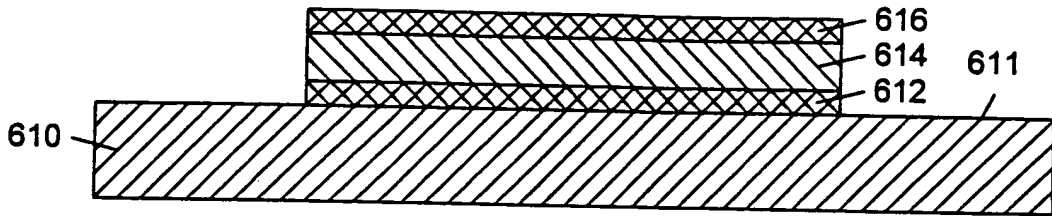


FIG. 23A

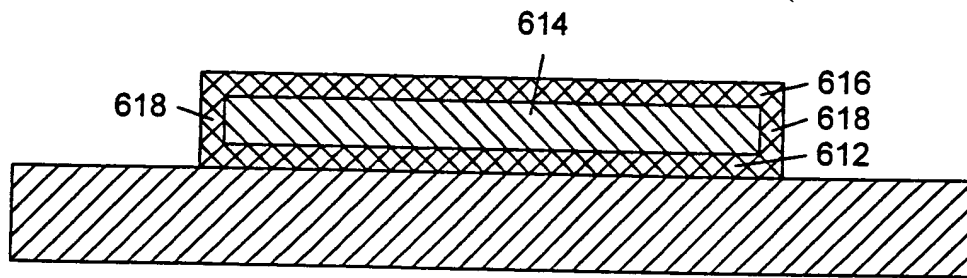


FIG. 23B

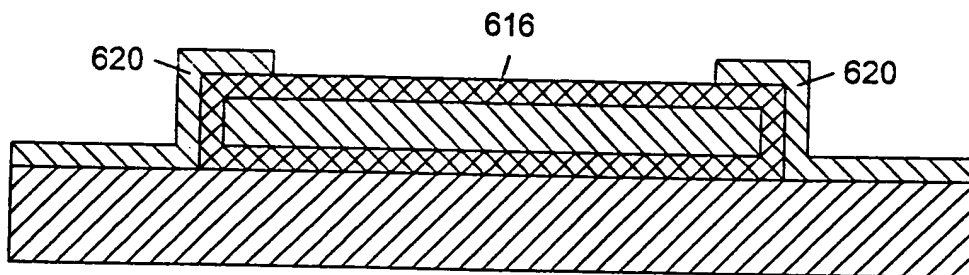


FIG. 23C

FIG. 23A

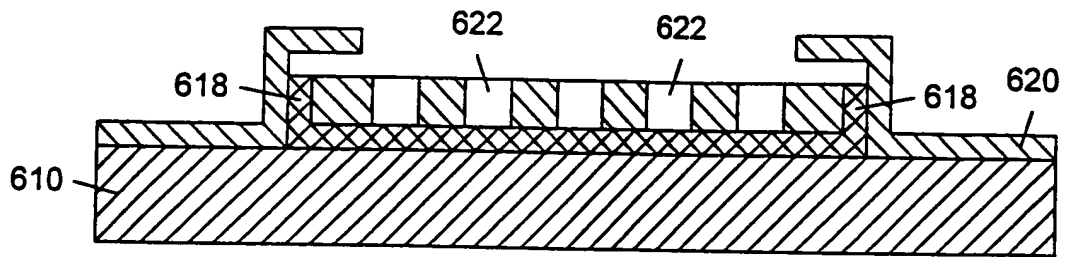


FIG. 23D

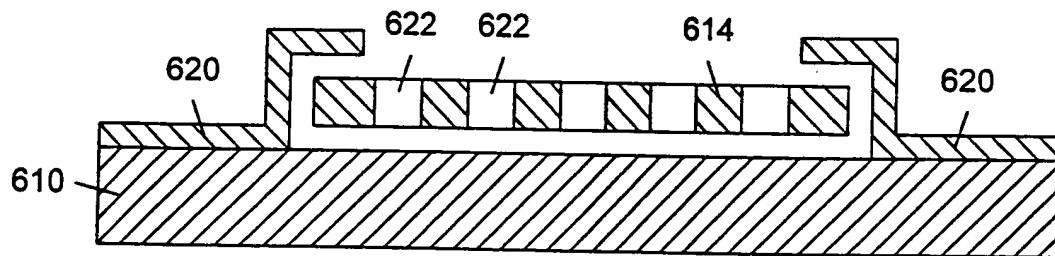


FIG. 23E

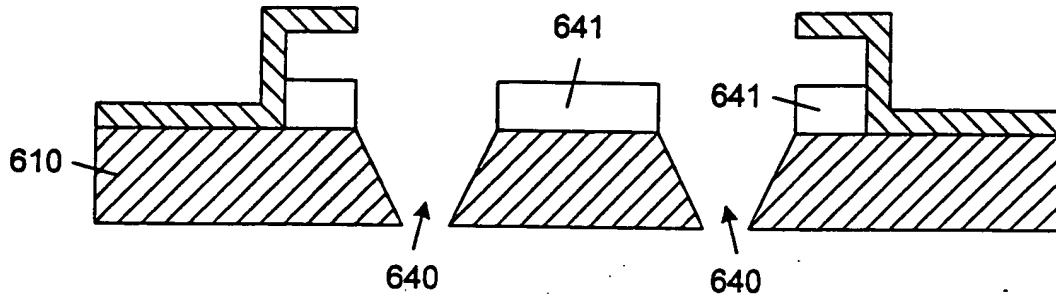


FIG. 23F

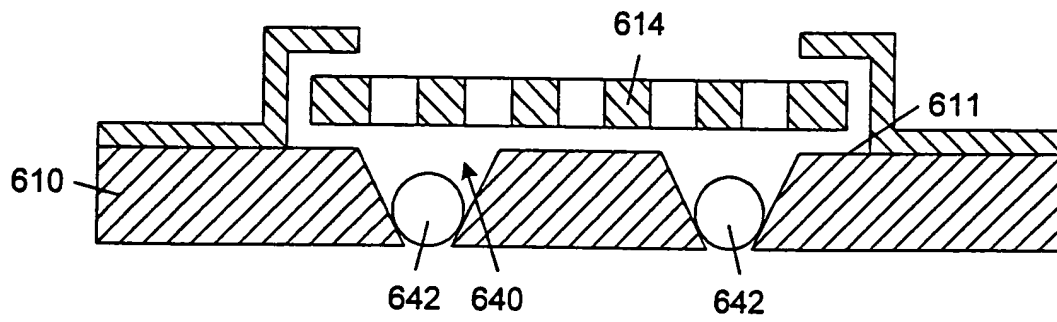


FIG. 23G

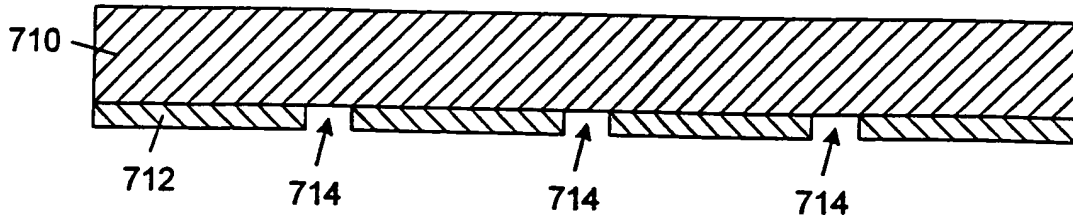


FIG. 24A

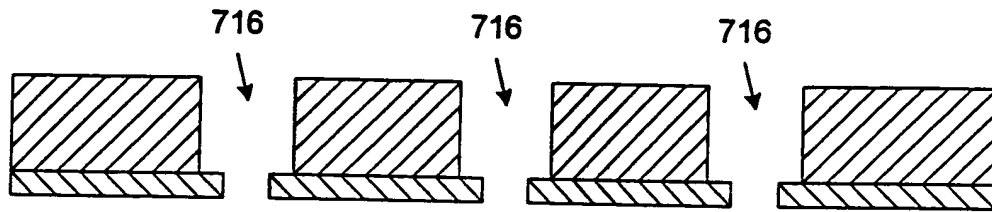


FIG. 24B

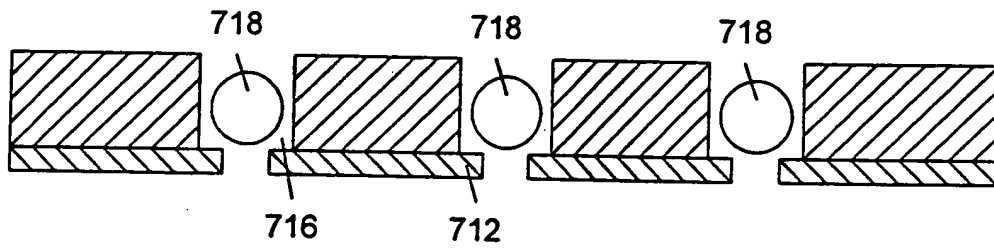


FIG. 24C

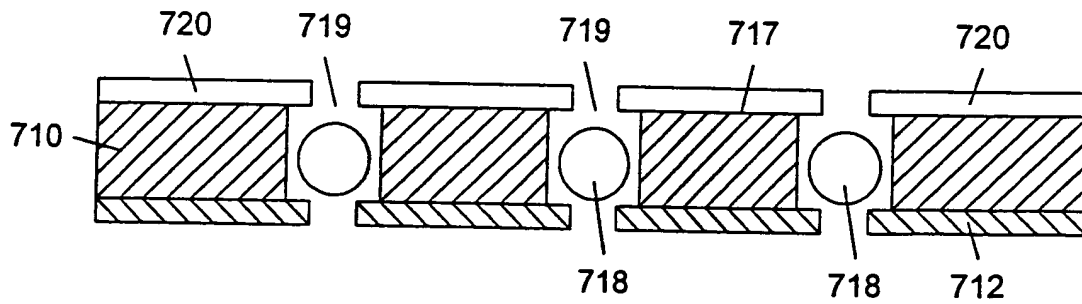


FIG. 24D

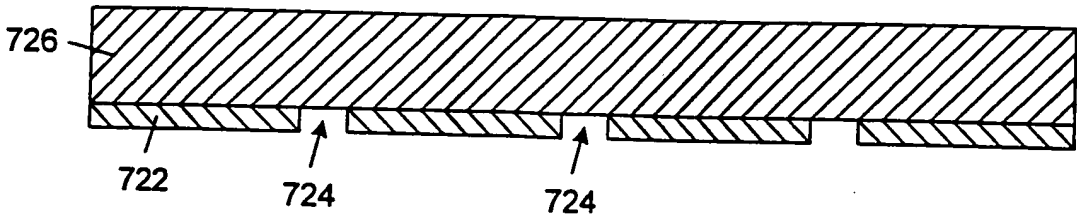


FIG. 25A

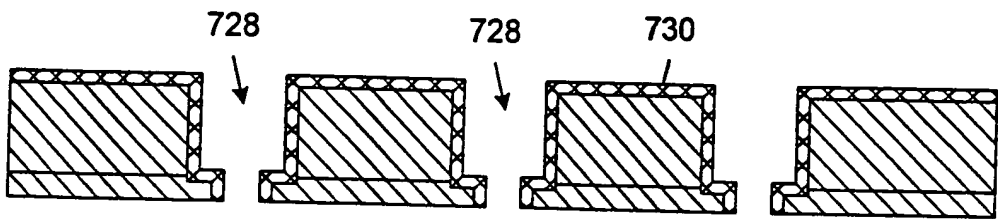


FIG. 25B

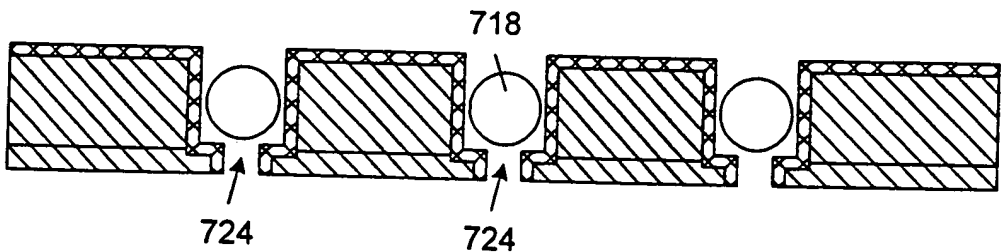


FIG. 25C

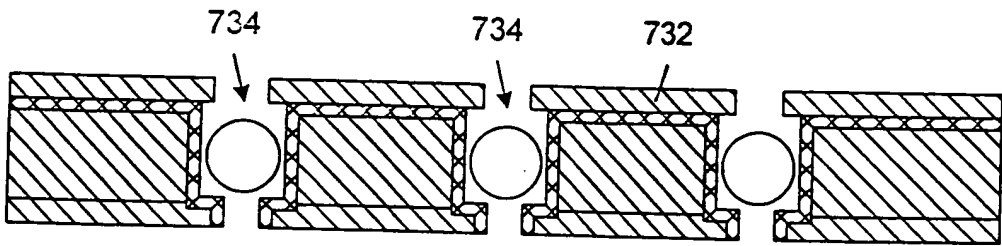


FIG. 25D

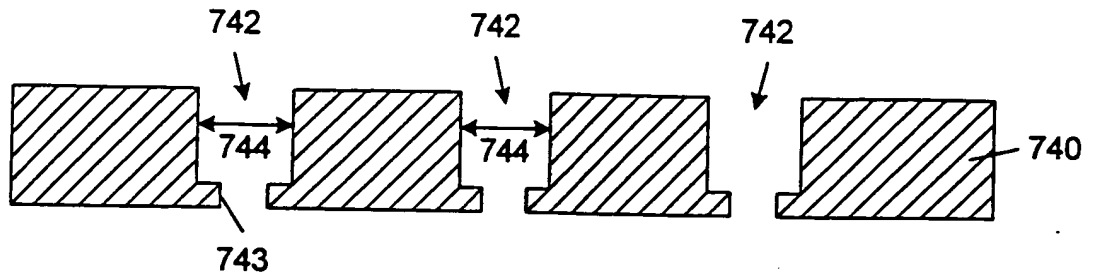


FIG. 26A

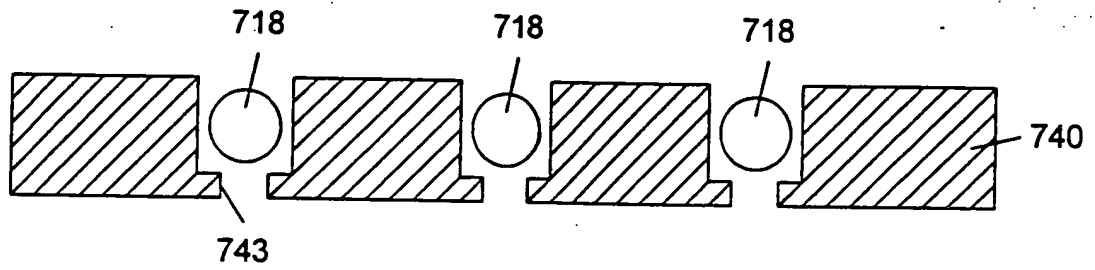


FIG. 26B

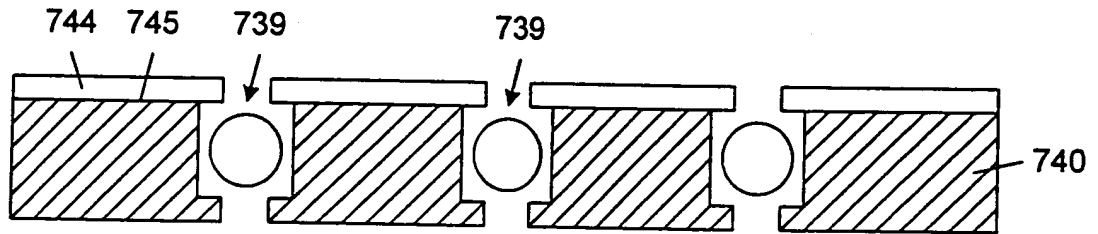


FIG. 26C

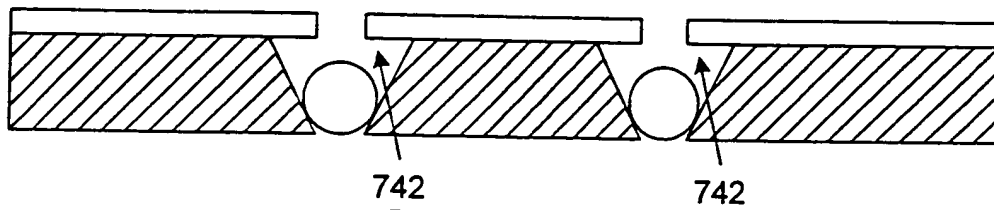


FIG. 26D

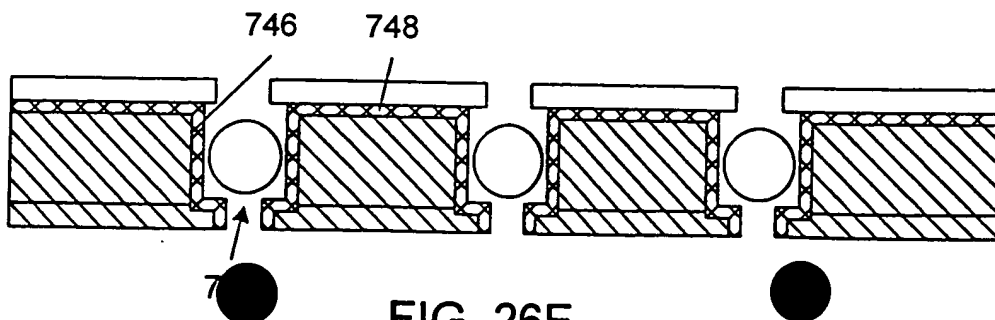


FIG. 26E

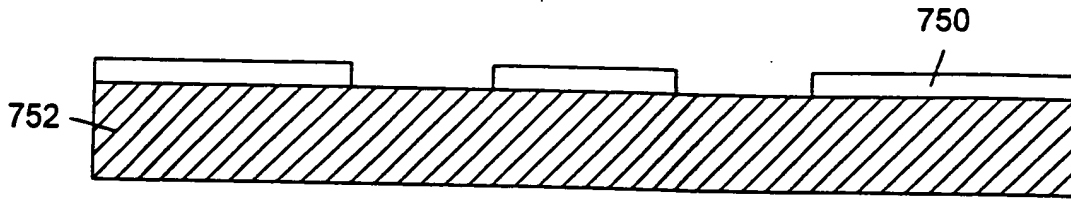


FIG. 27A

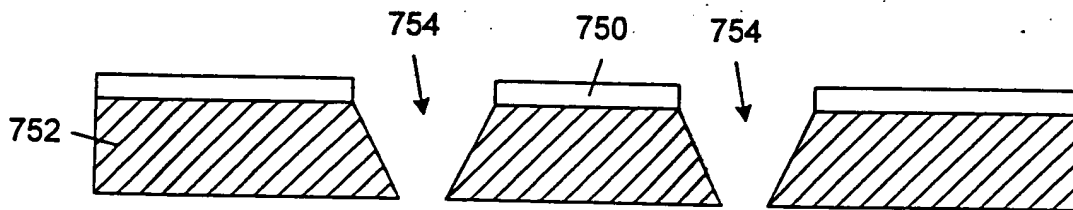


FIG. 27B

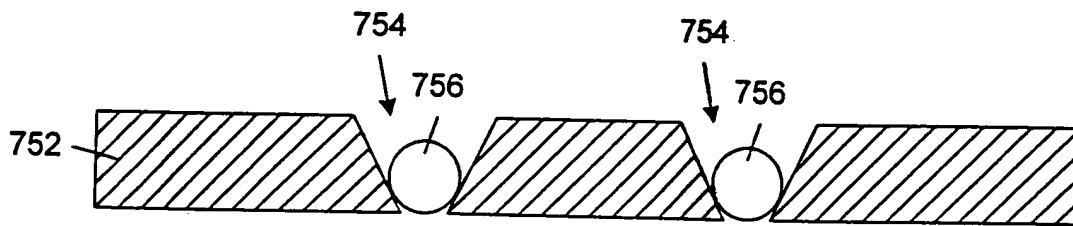


FIG. 27C

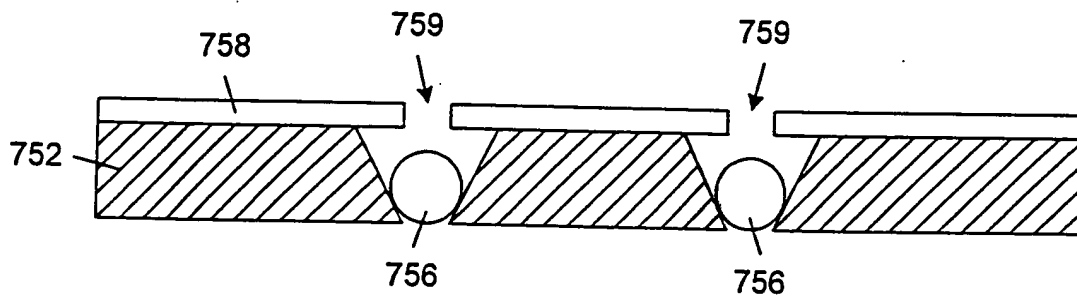


FIG. 27D

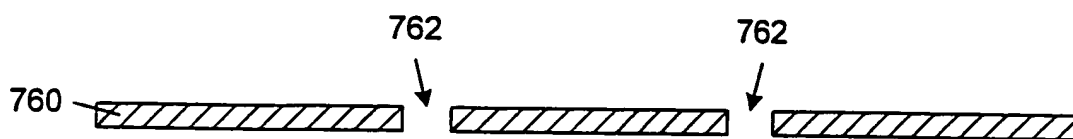


FIG. 28A



FIG. 28B

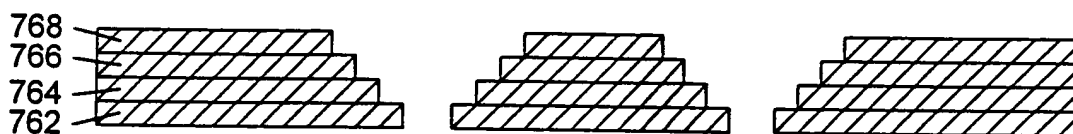


FIG. 28C

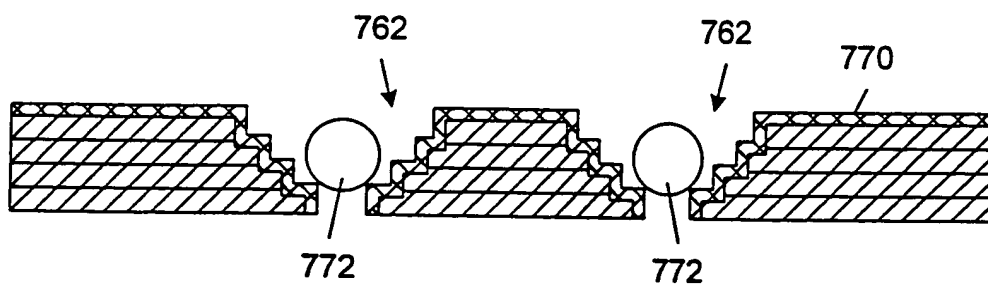


FIG. 28D

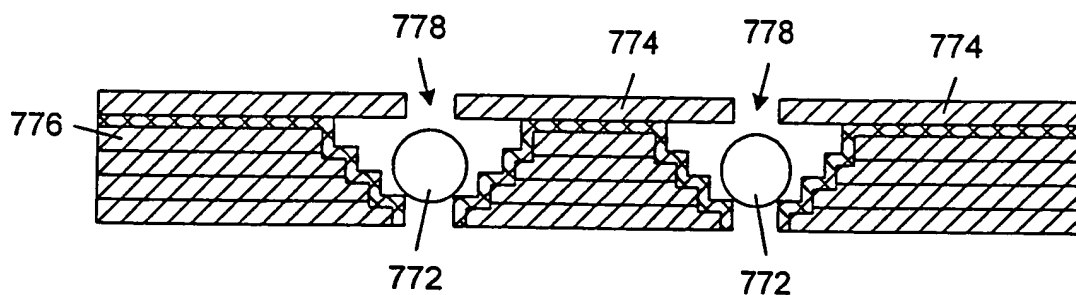


FIG. 28E

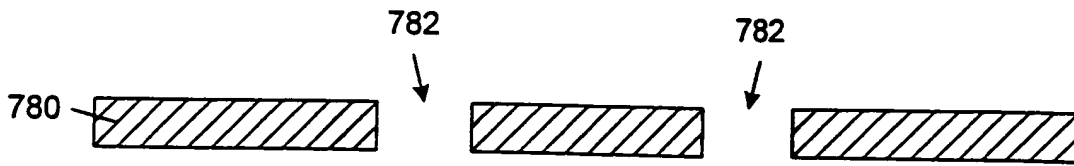


FIG. 29A

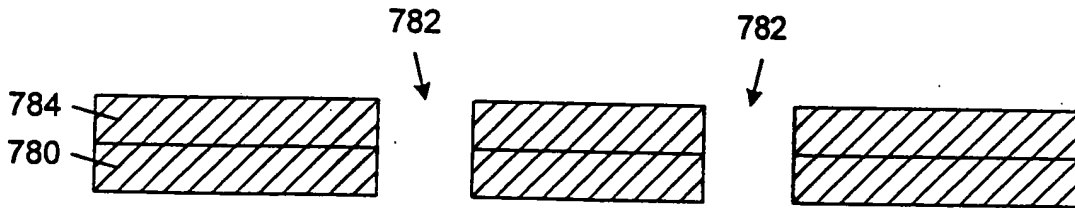


FIG. 29B

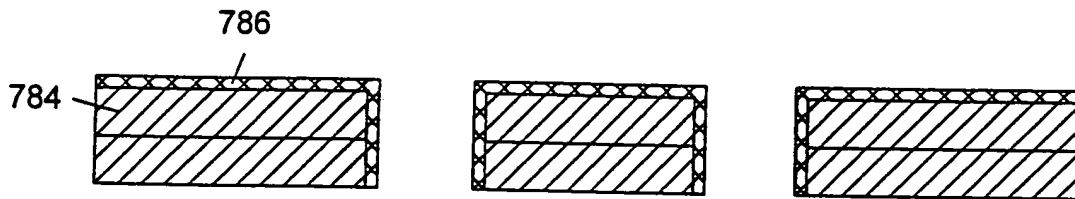


FIG. 29C

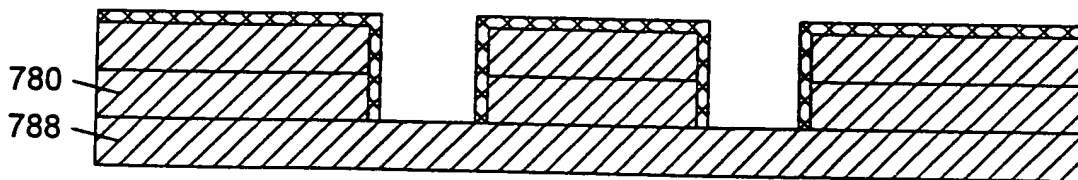


FIG. 29D

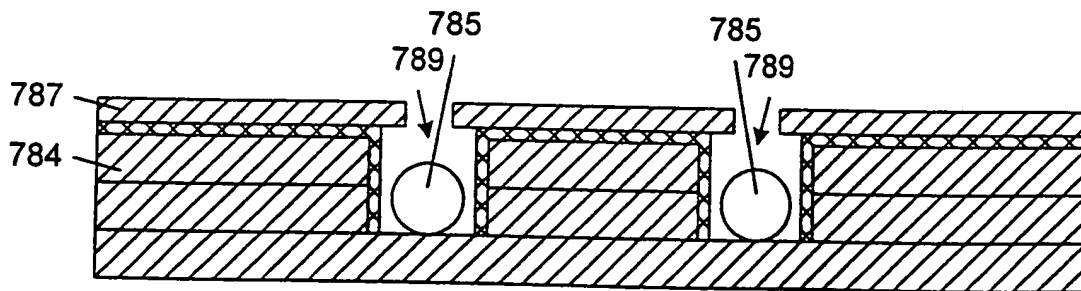


FIG. 29E

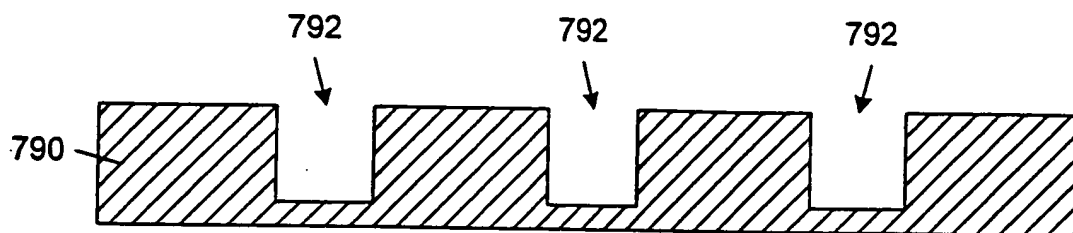


FIG. 30A

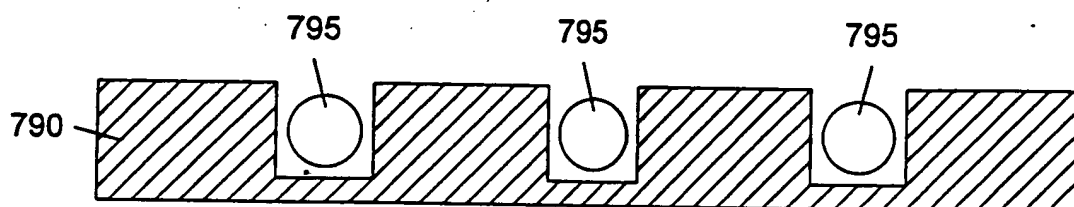


FIG. 30B

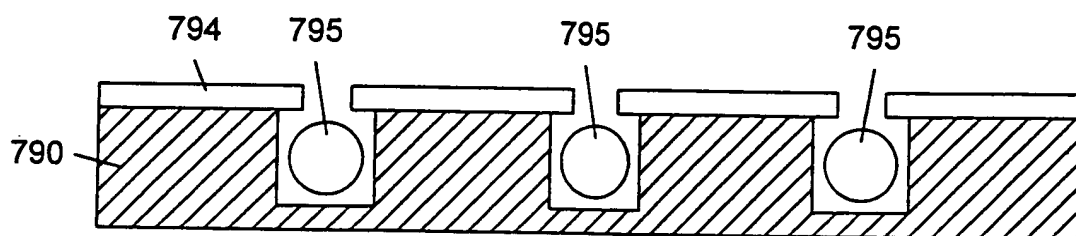


FIG. 30C

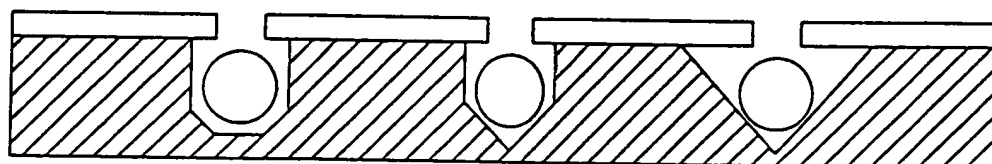


FIG. 30D

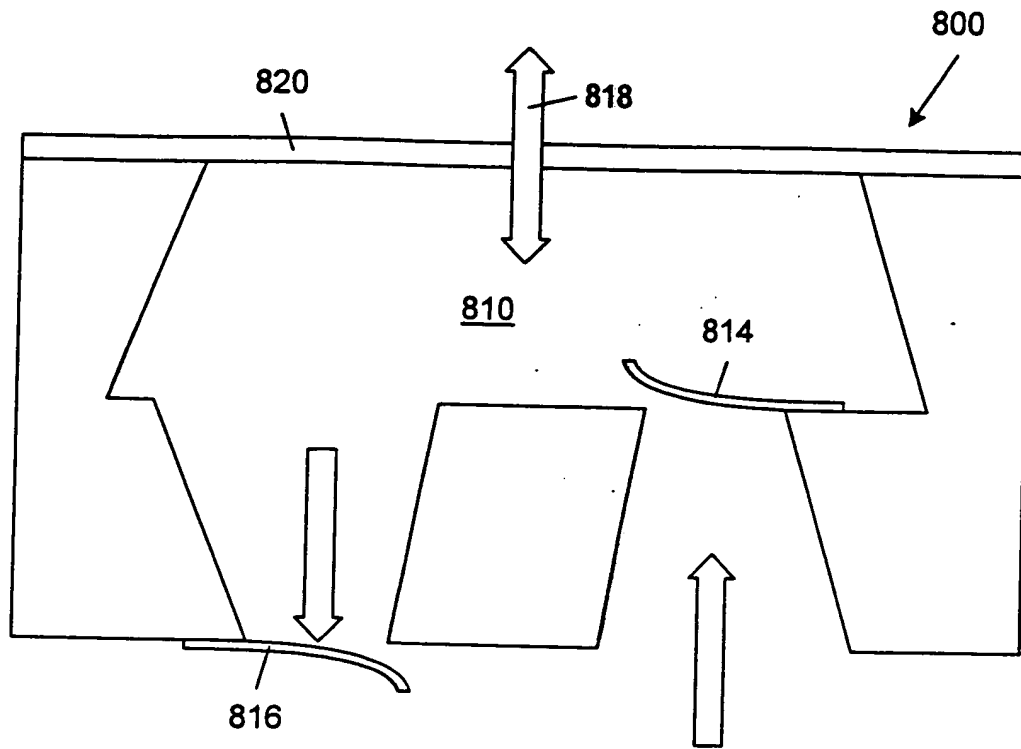


FIG. 31

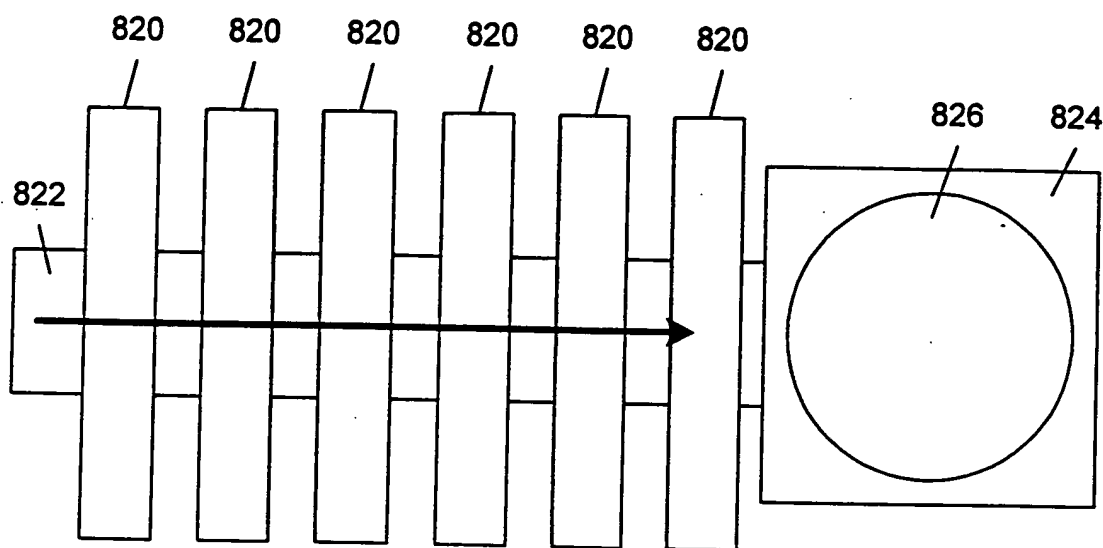


FIG. 32

for reference

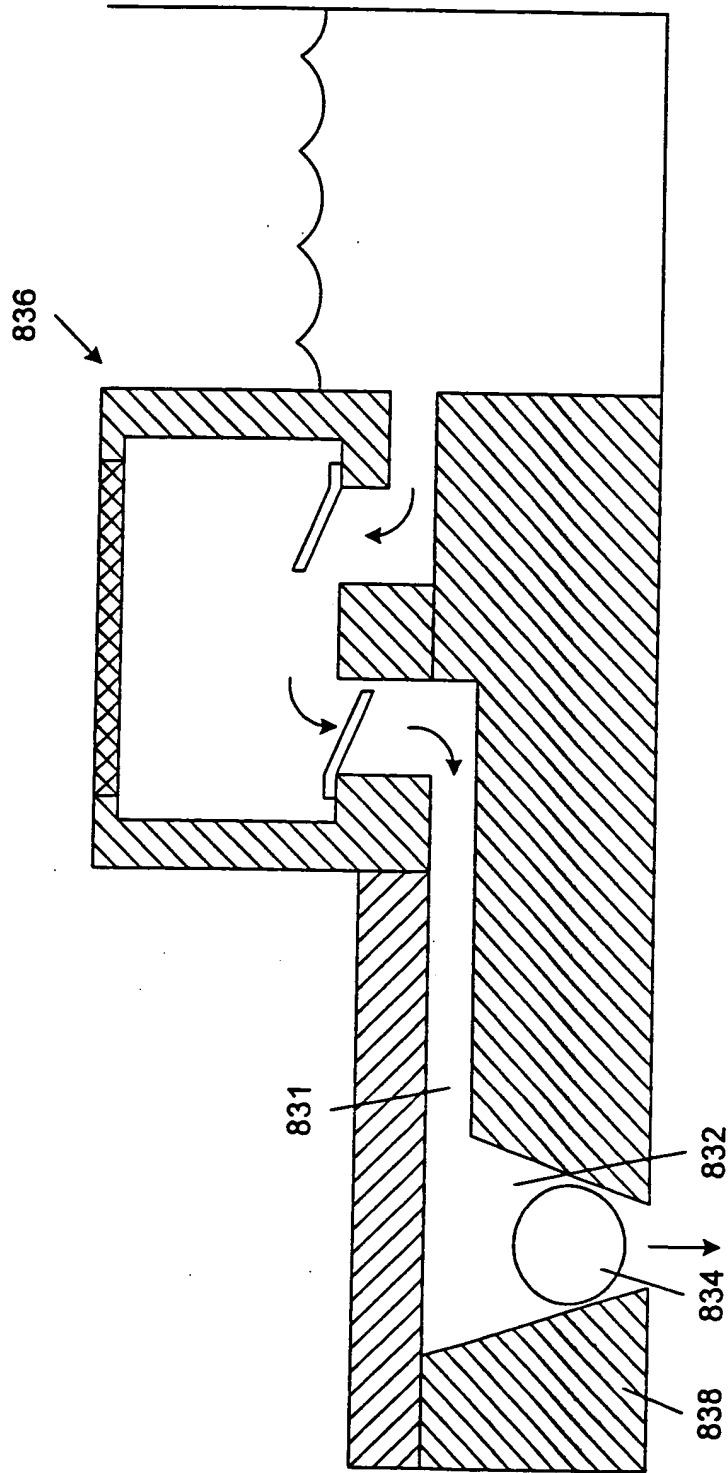


FIG. 33

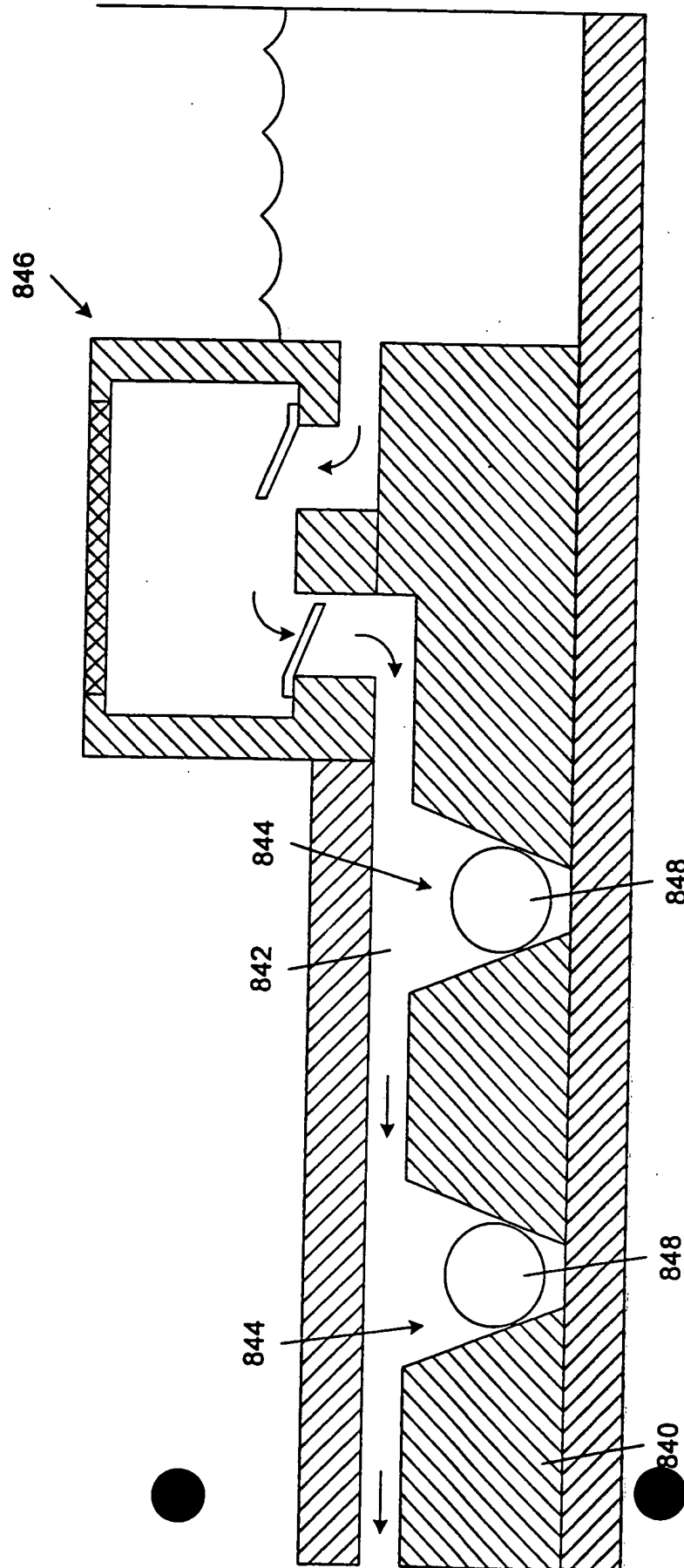


FIG. 34

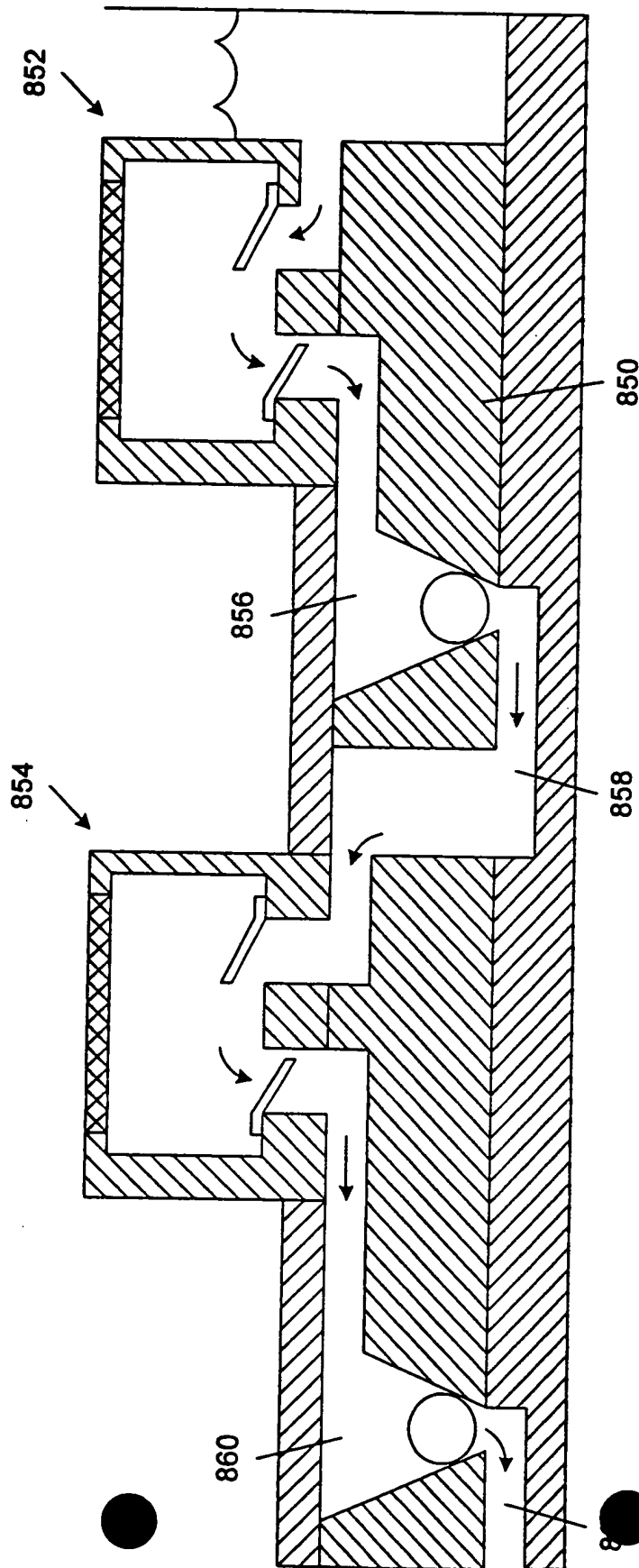


FIG. 35

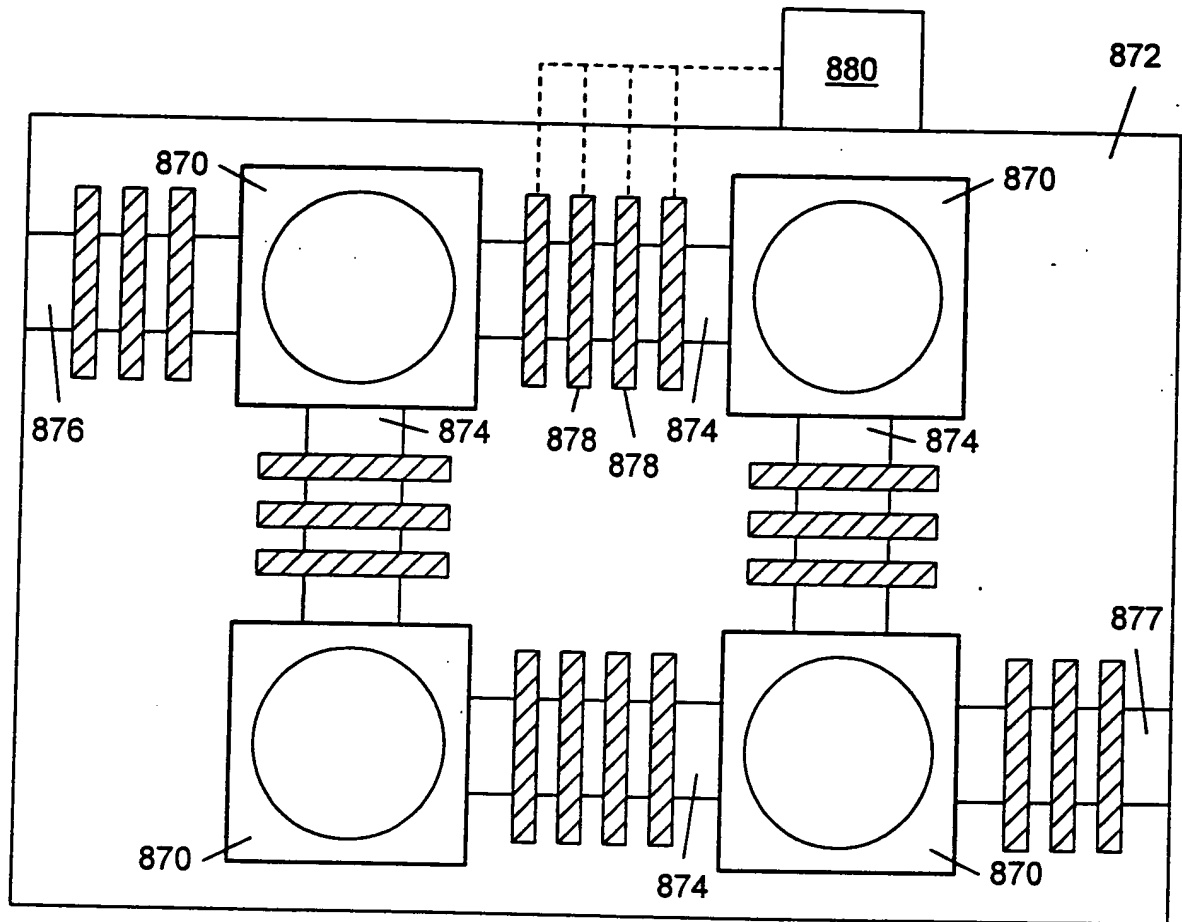


FIG. 36

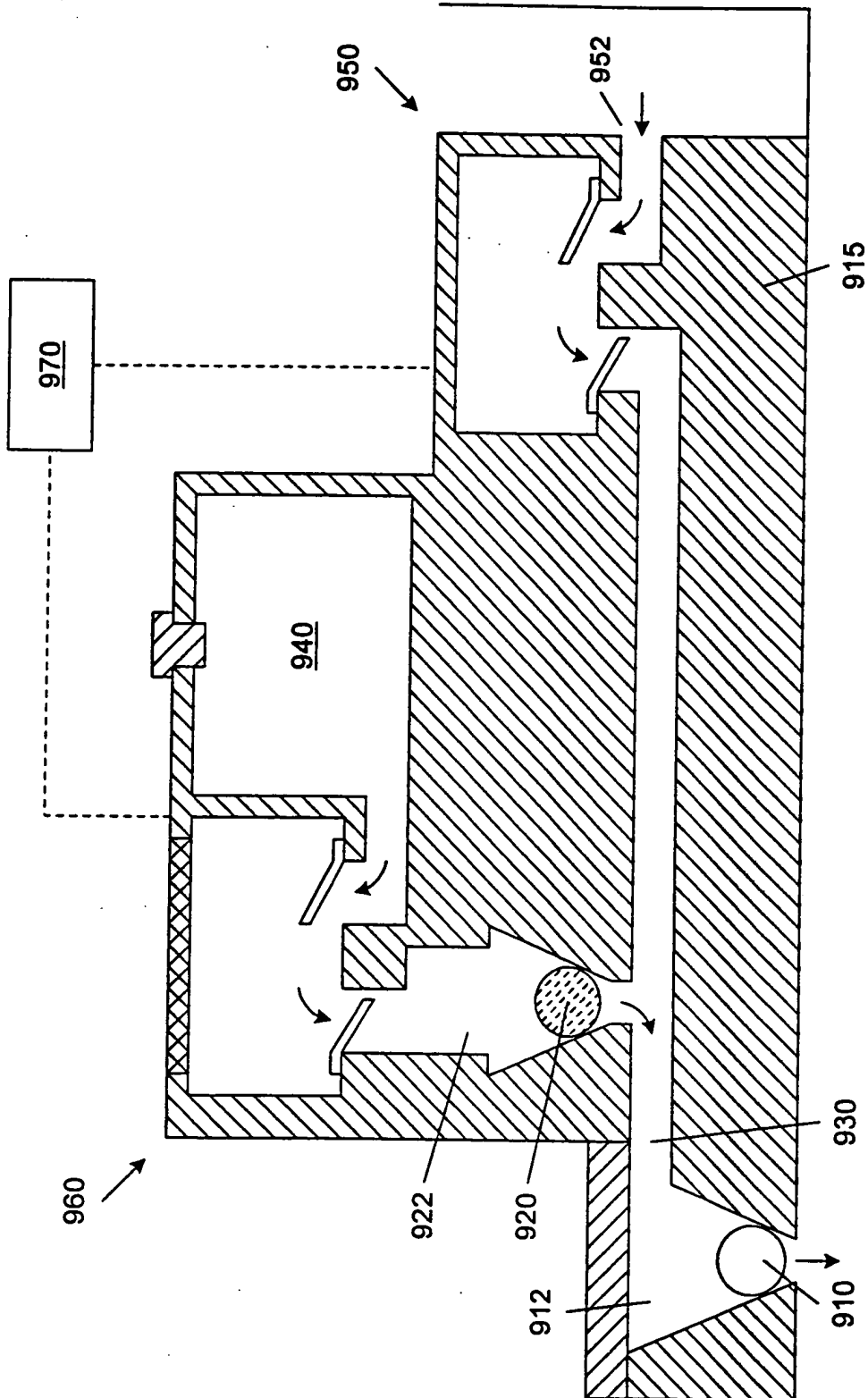


FIG. 37

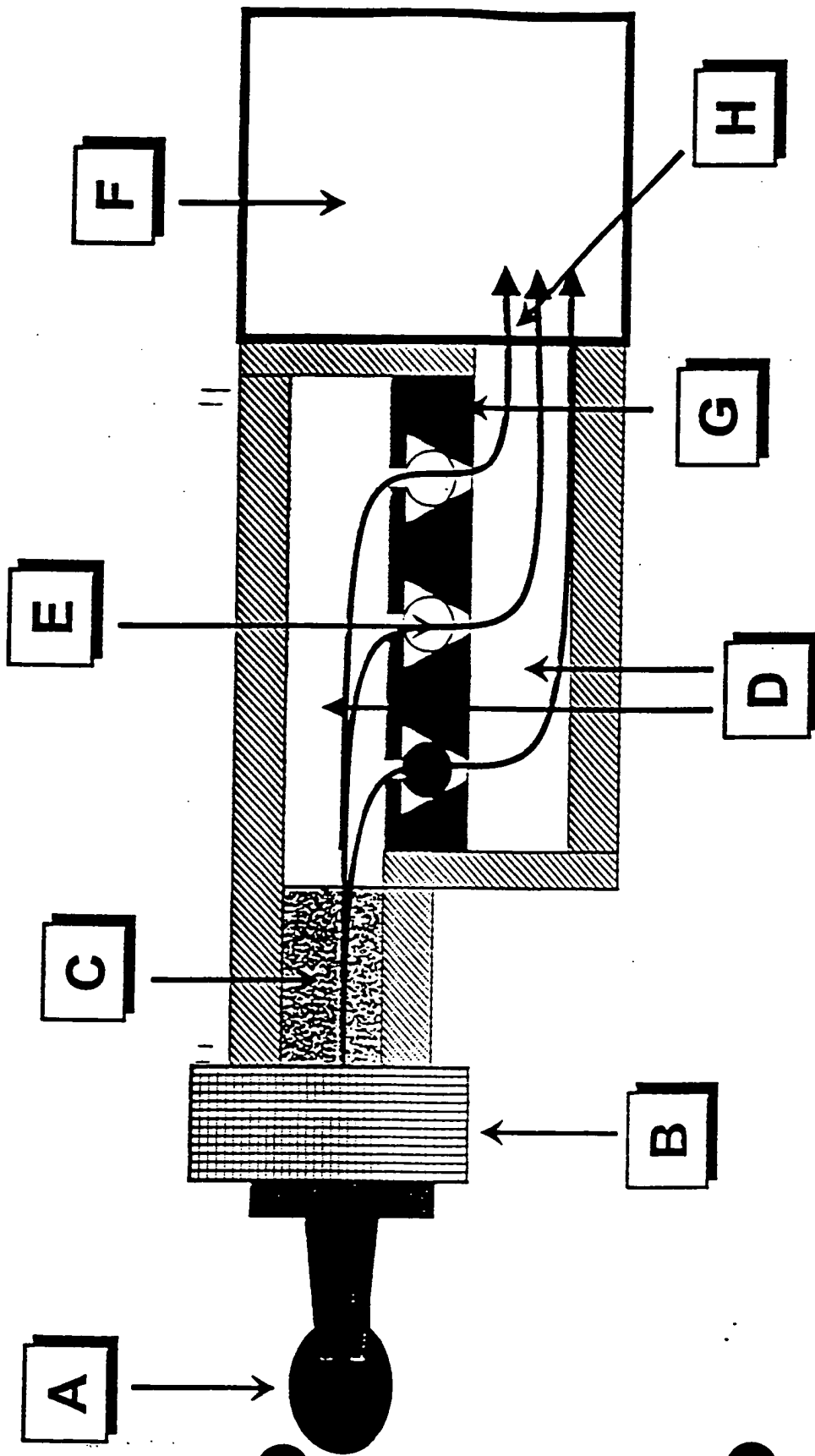


Figure 39

TOP SECRET

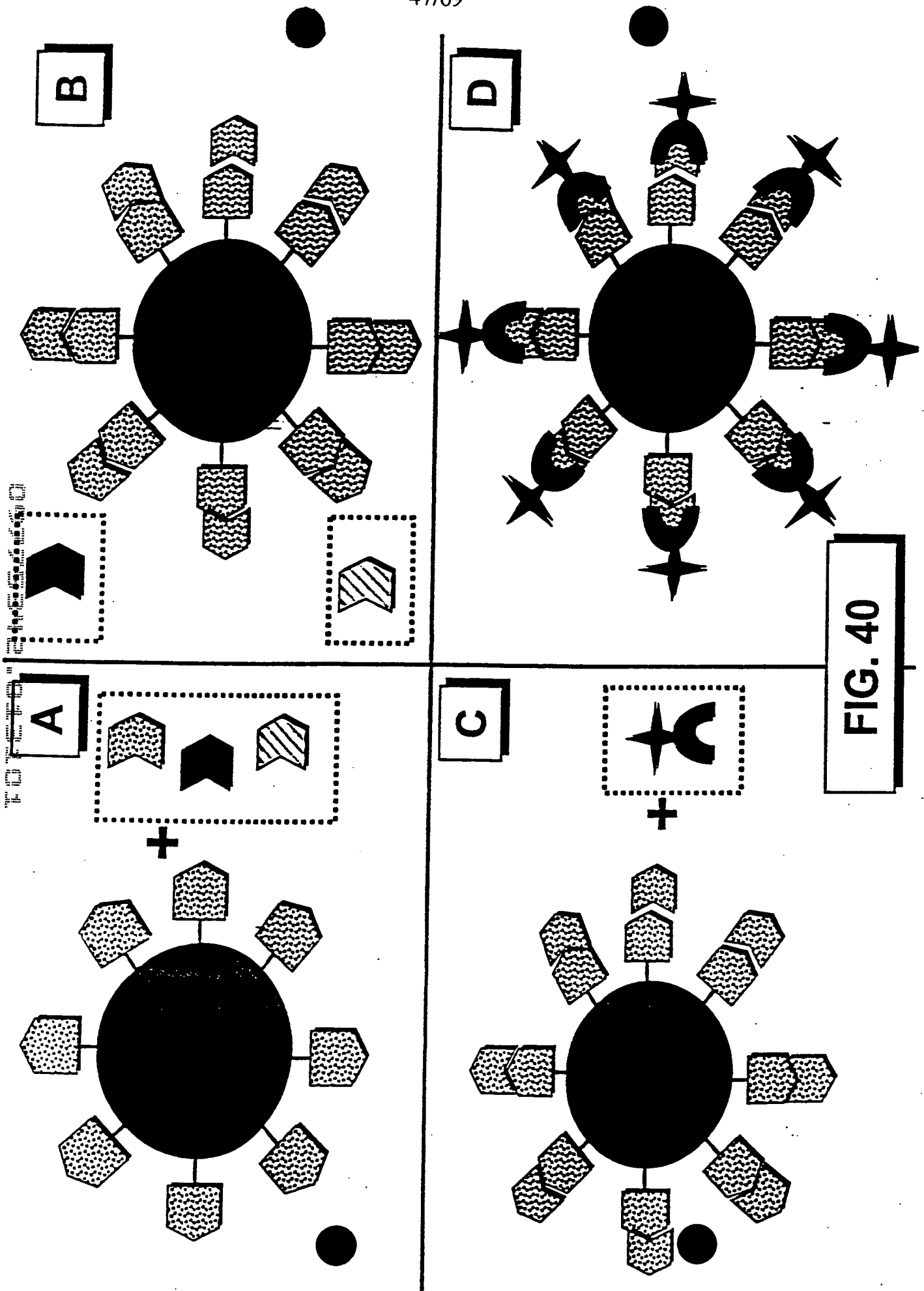
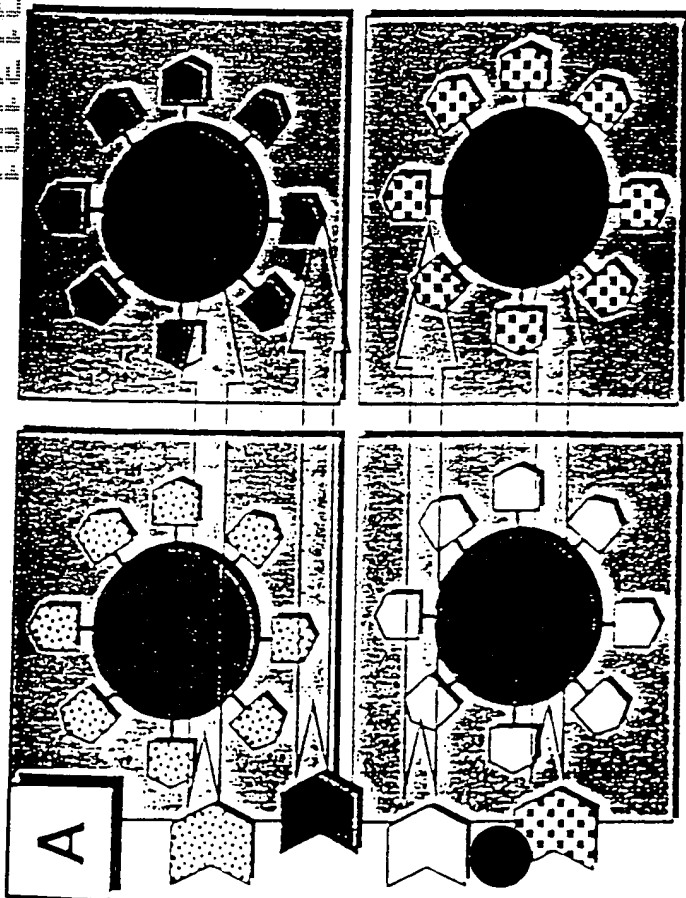
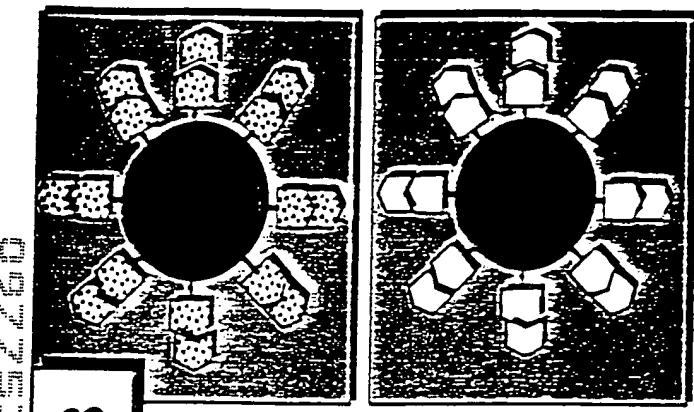


FIG. 40

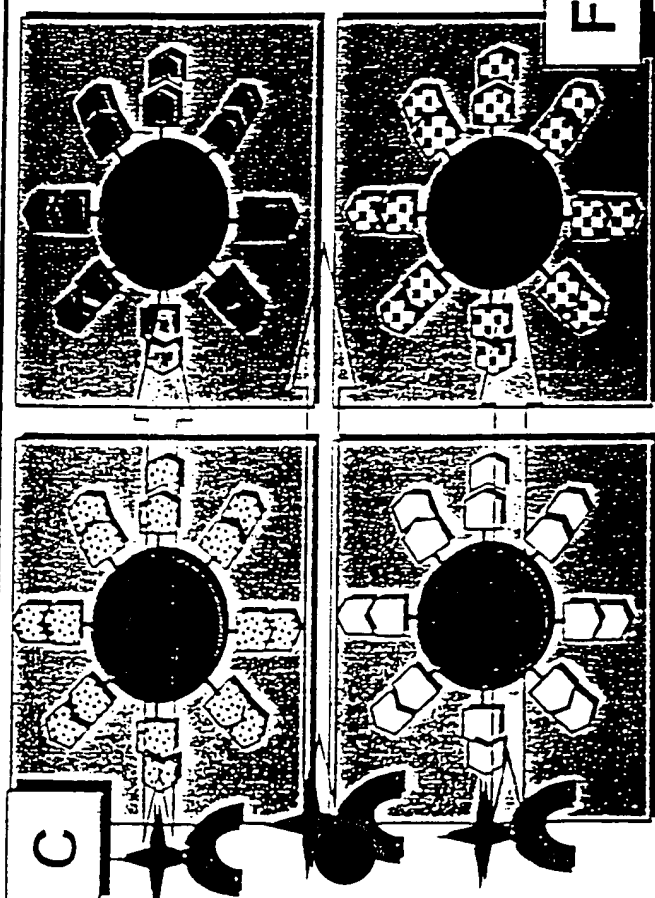
FIG. 41



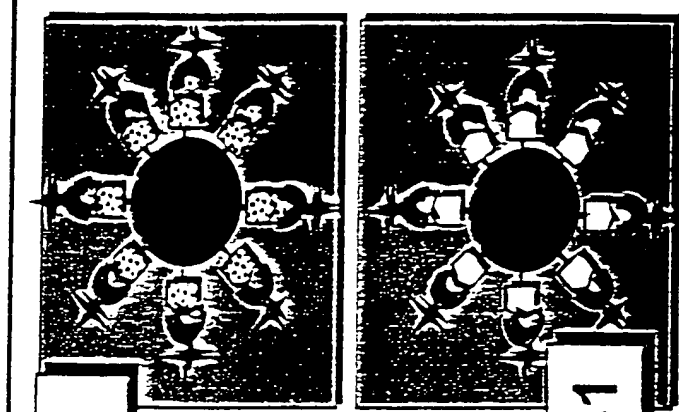
A



B



C



D

FIG. 41

Electronic Tongue Biological Sample Acquisition

Prototype 6/2/99

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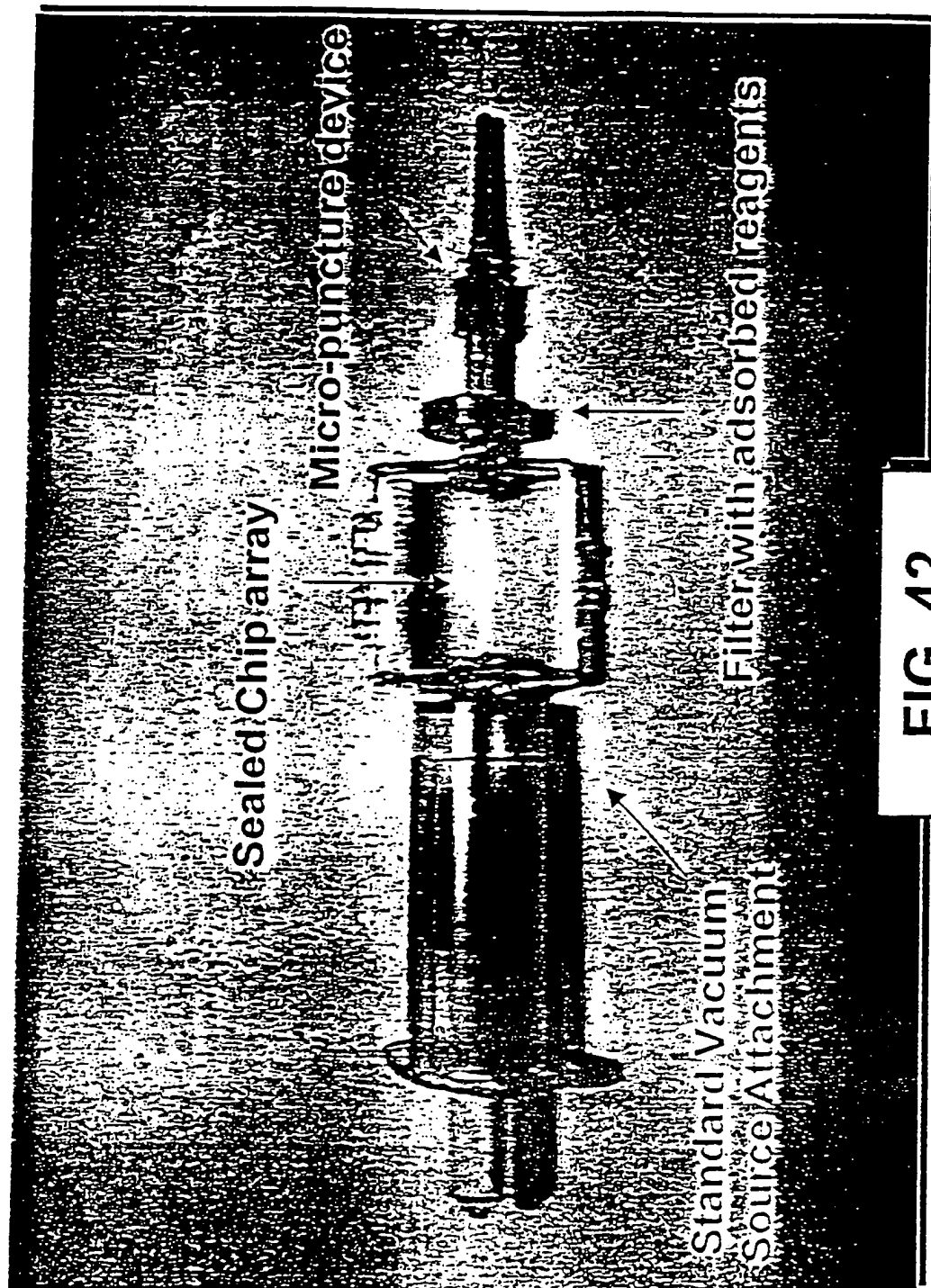


FIG. 42

FIG. 43 is a schematic diagram of a flow control device in a forward flow direction.

Forward Flow Direction

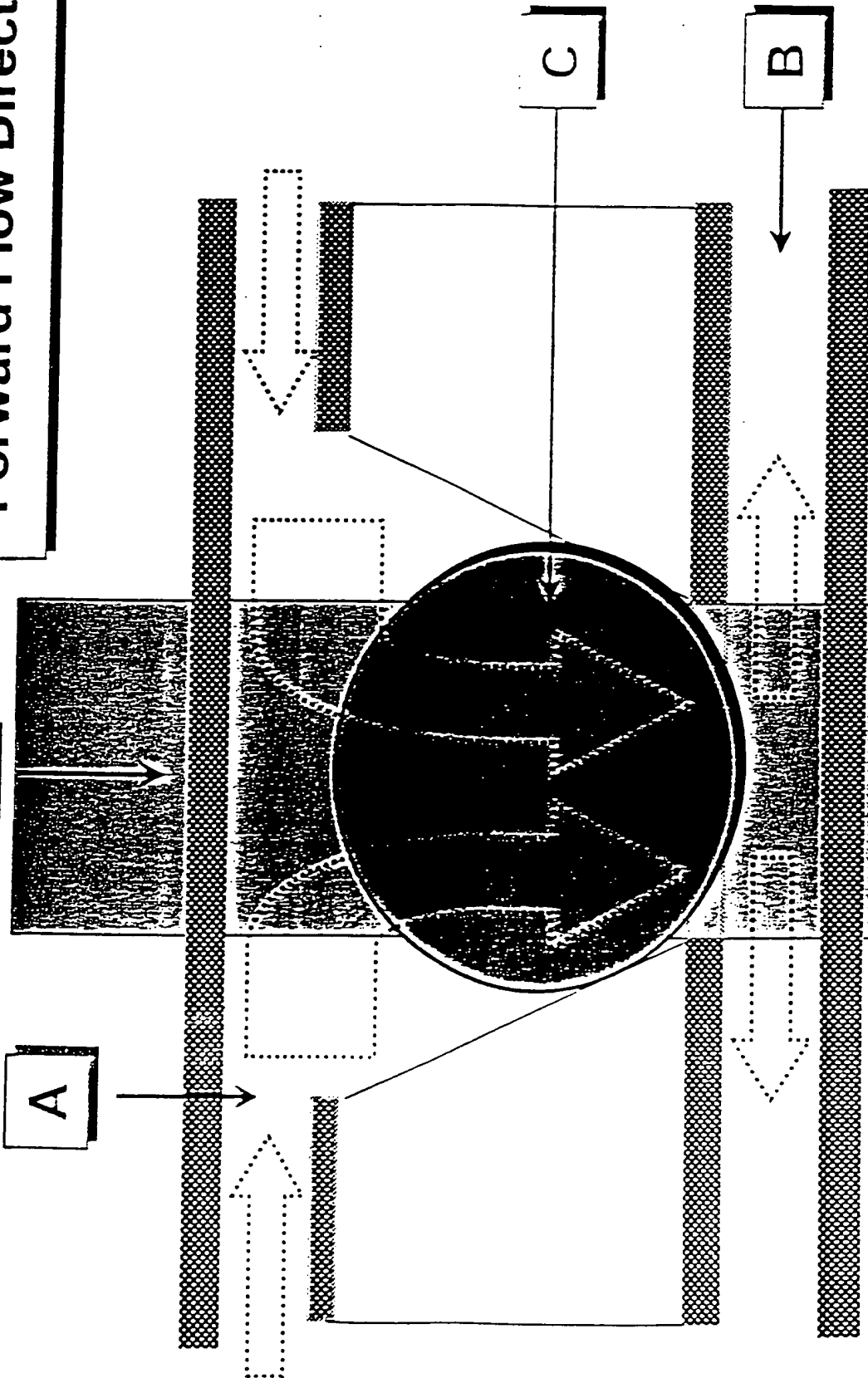


FIG. 43

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Reverse Flow Direction

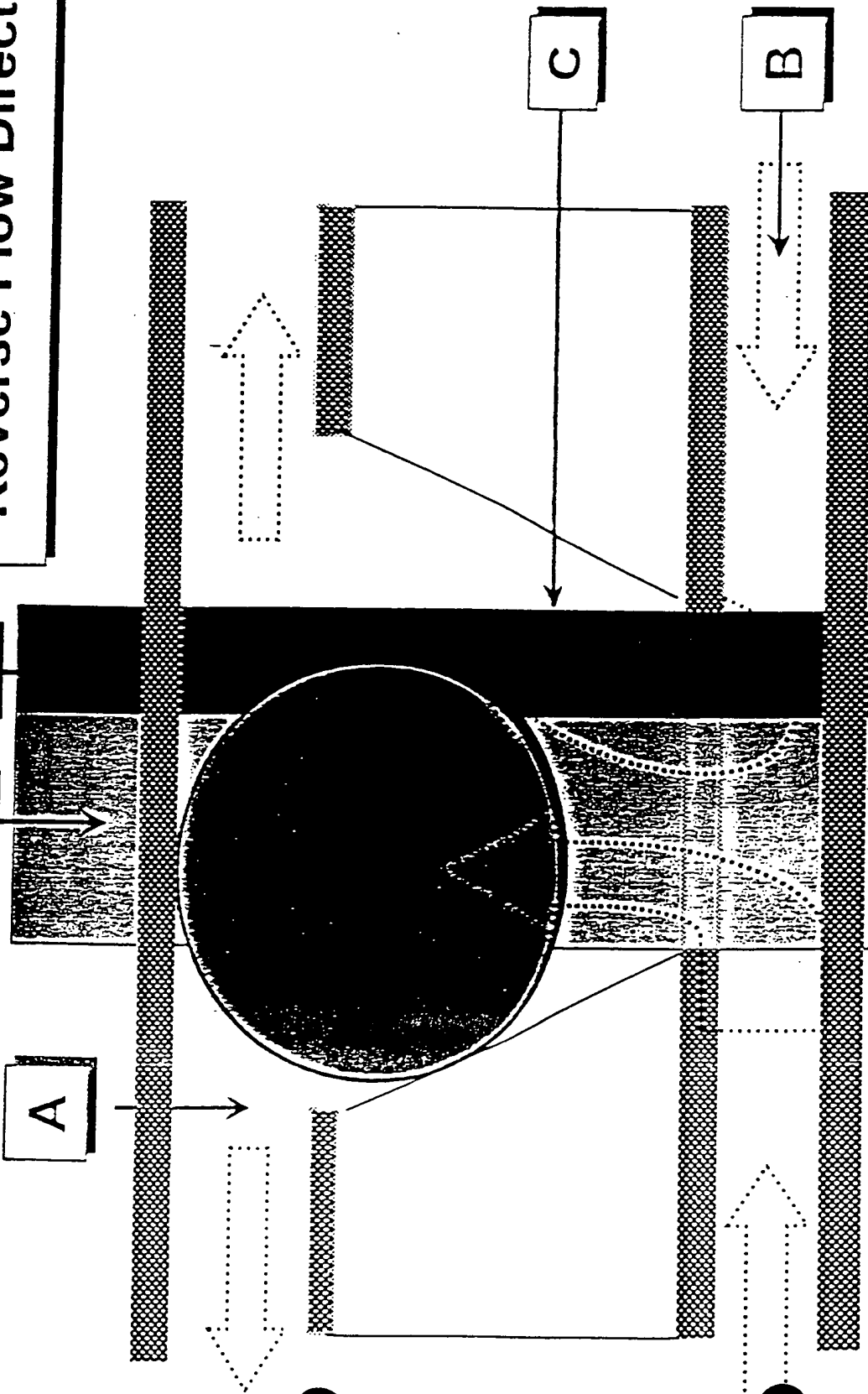


FIG. 44

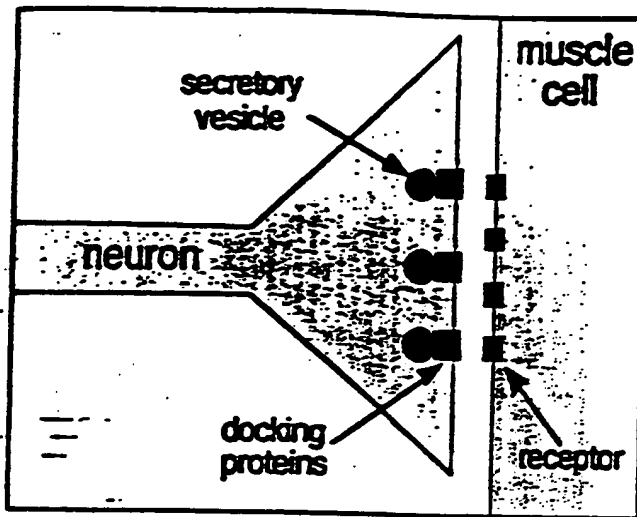


Fig. 45-A

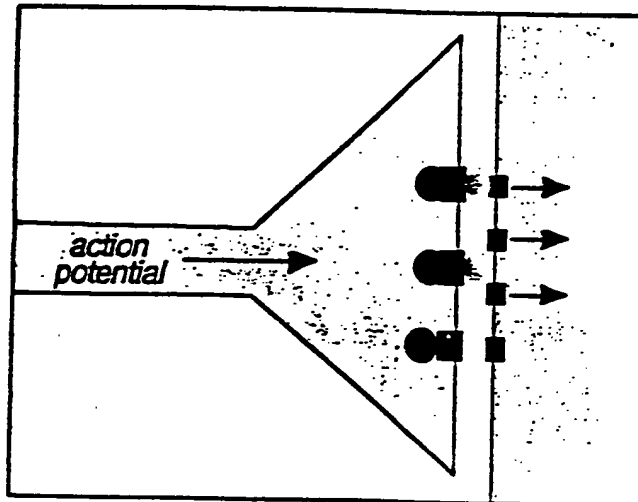


Fig. 45-B

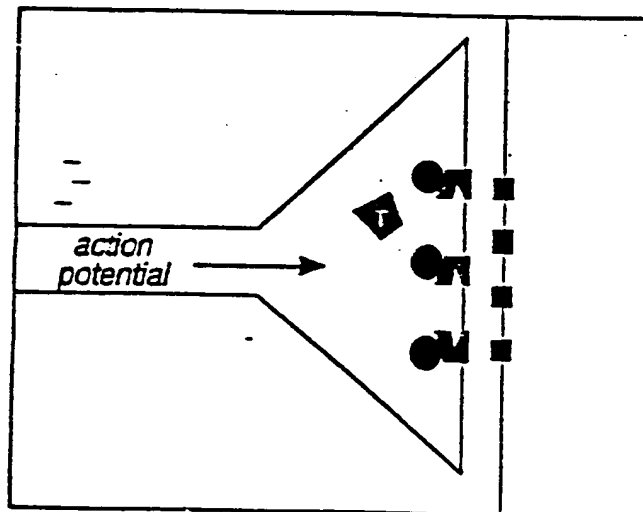


Fig. 45-C

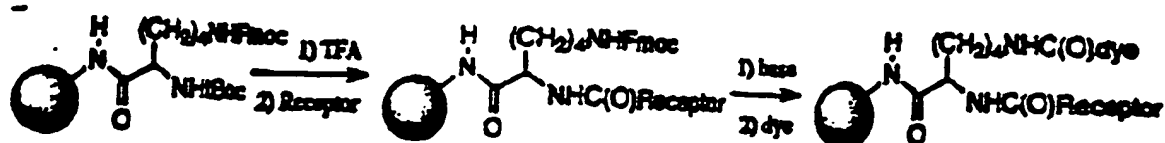


FIG. 45 D

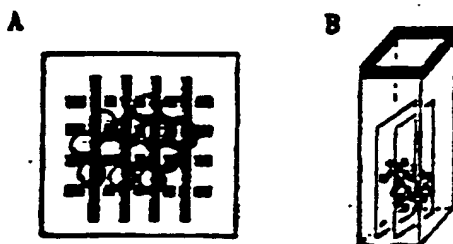


FIG. 46

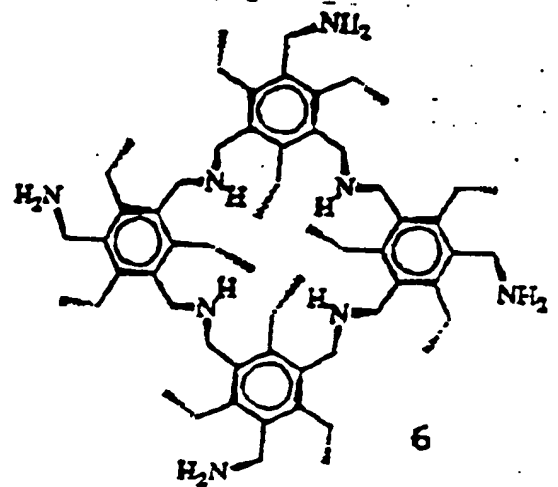
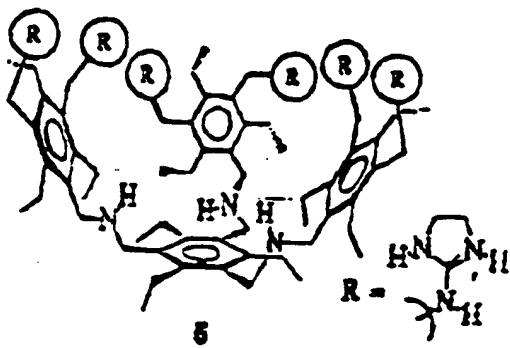
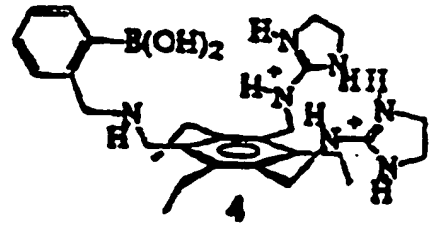
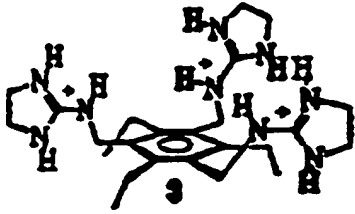


FIG. 47

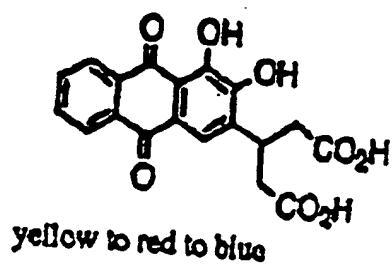
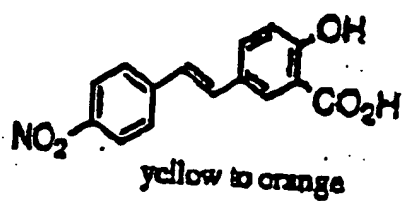
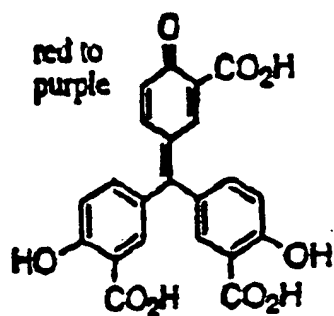
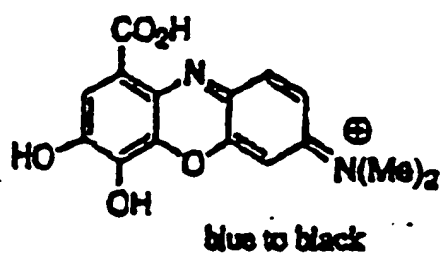
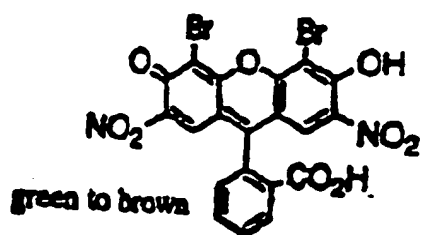


FIG. 48

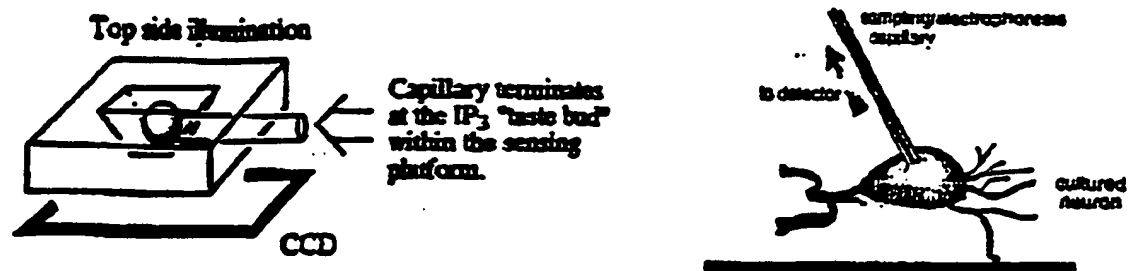


FIG. 49

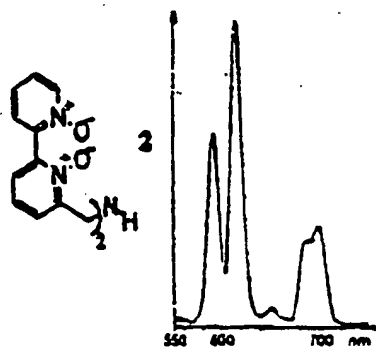
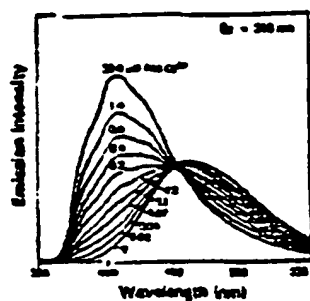
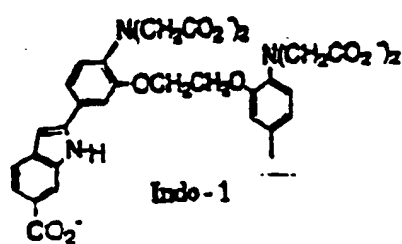


FIG. 50

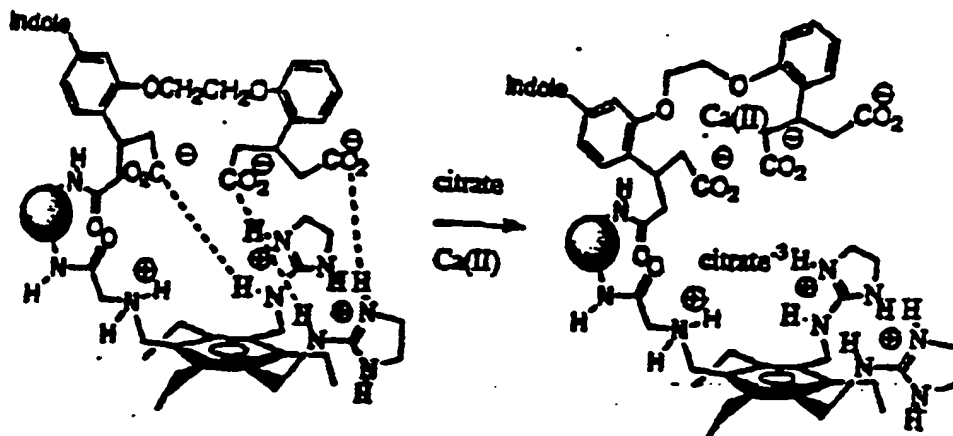


FIG. 51

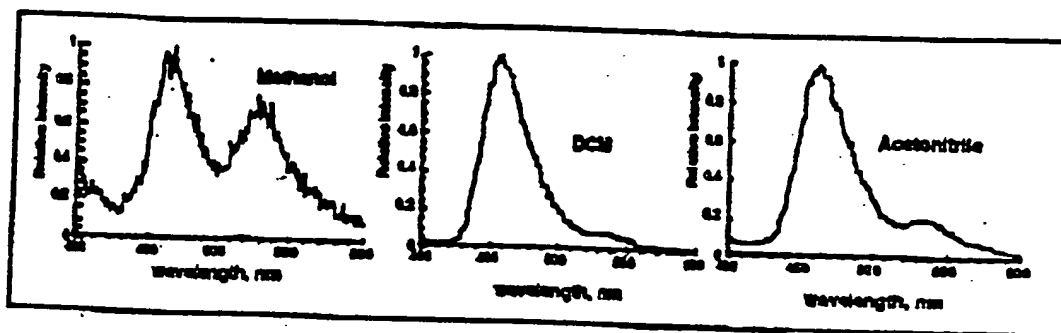


FIG. 52

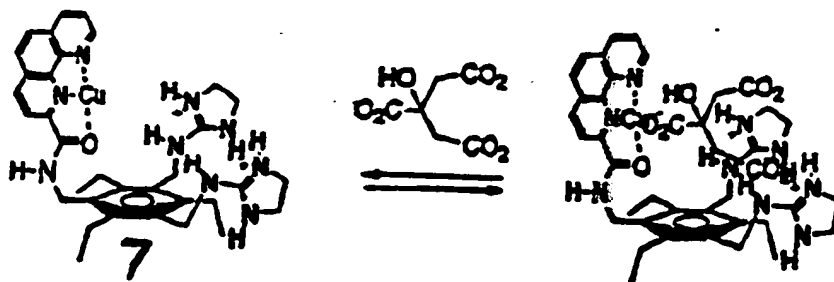


FIG. 53

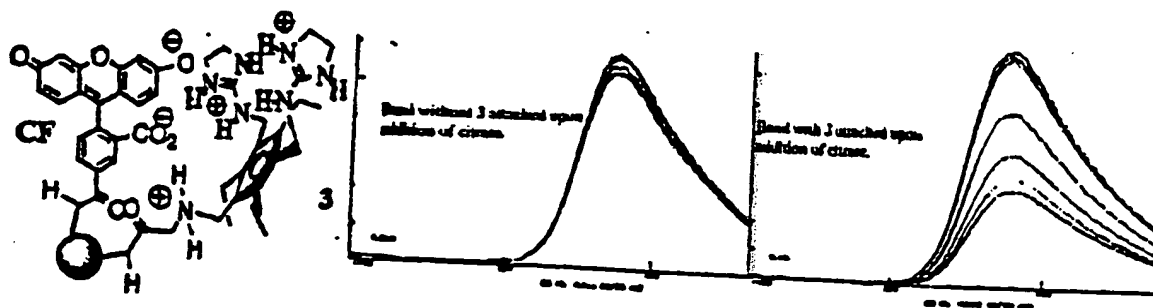


FIG. 54

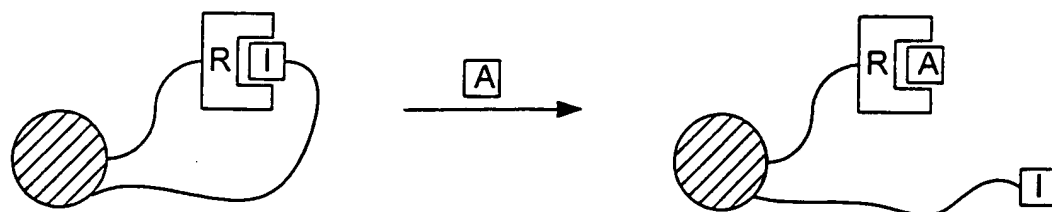


FIG. 55A

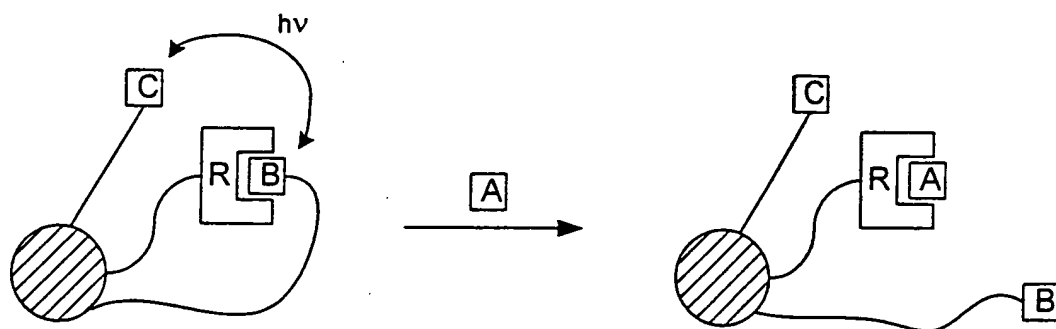


FIG. 55B

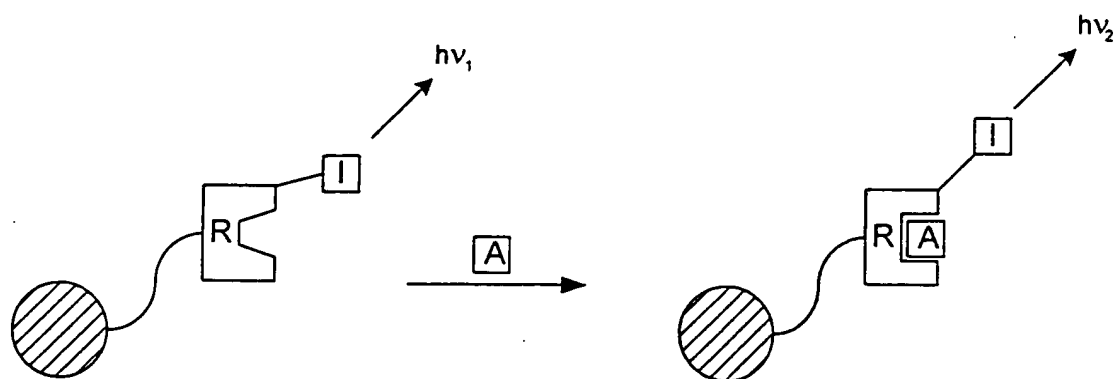


FIG. 55C

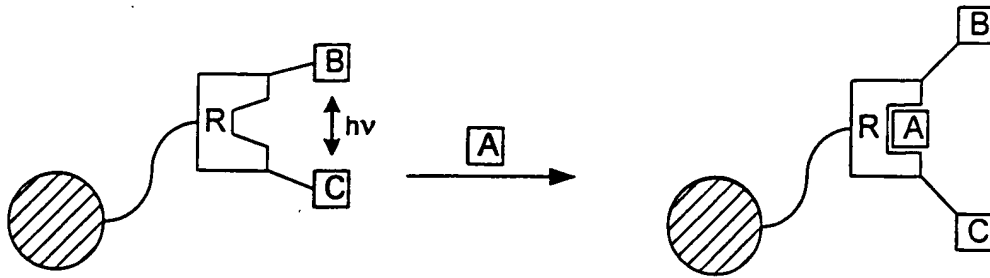


FIG. 55D

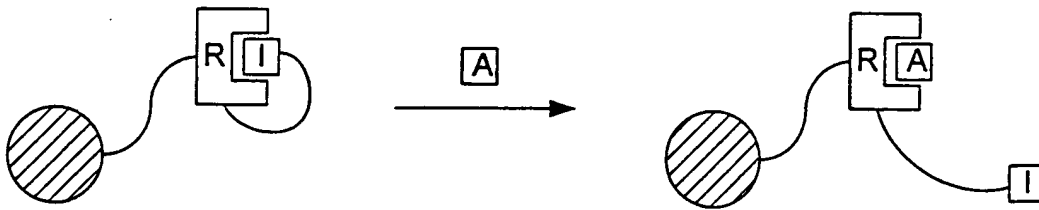


FIG. 55E

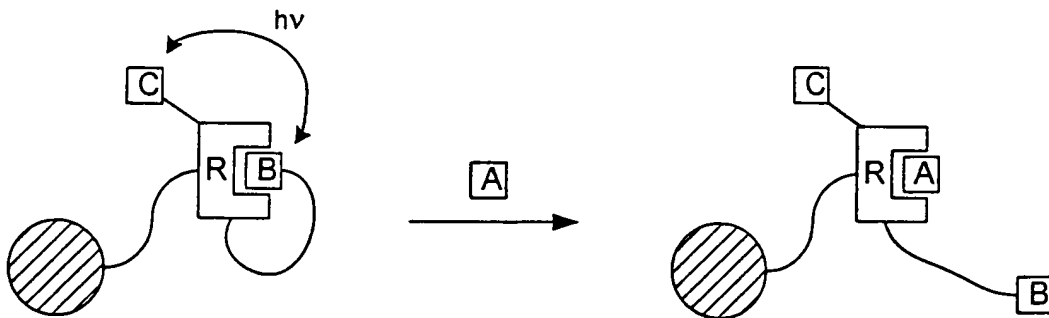


FIG. 55F

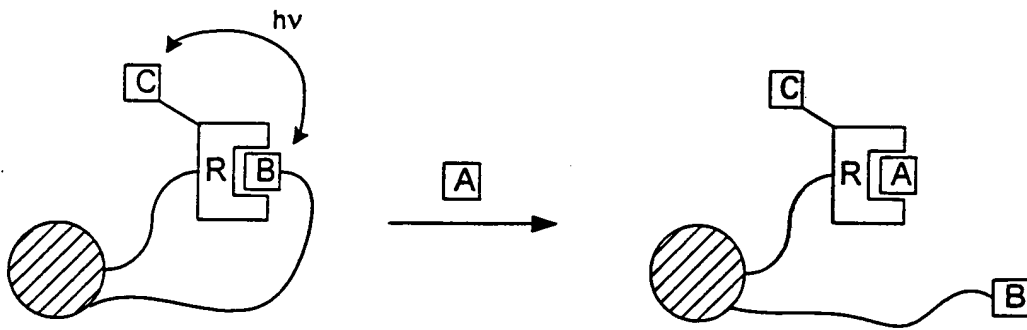


FIG. 55G

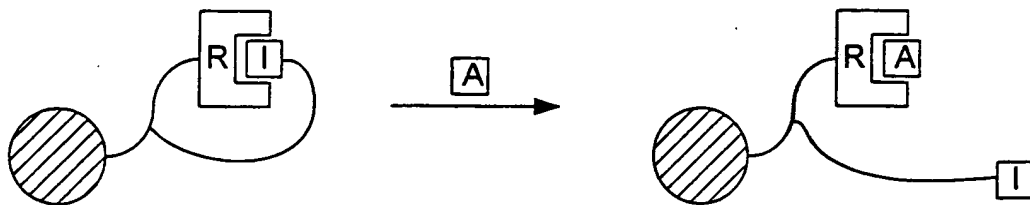


FIG. 55H

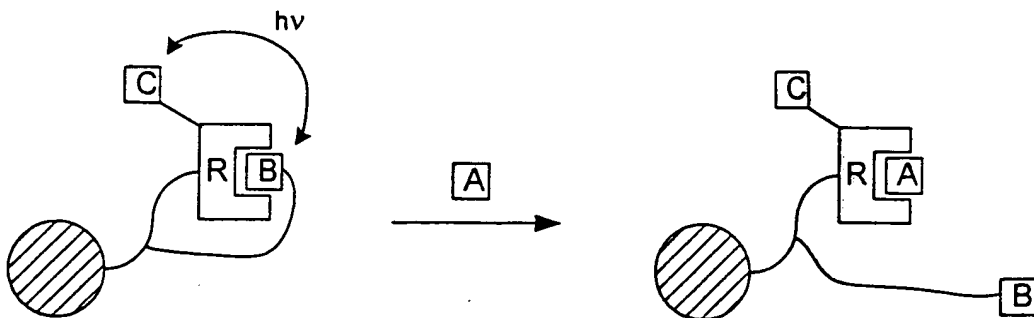


FIG. 55I

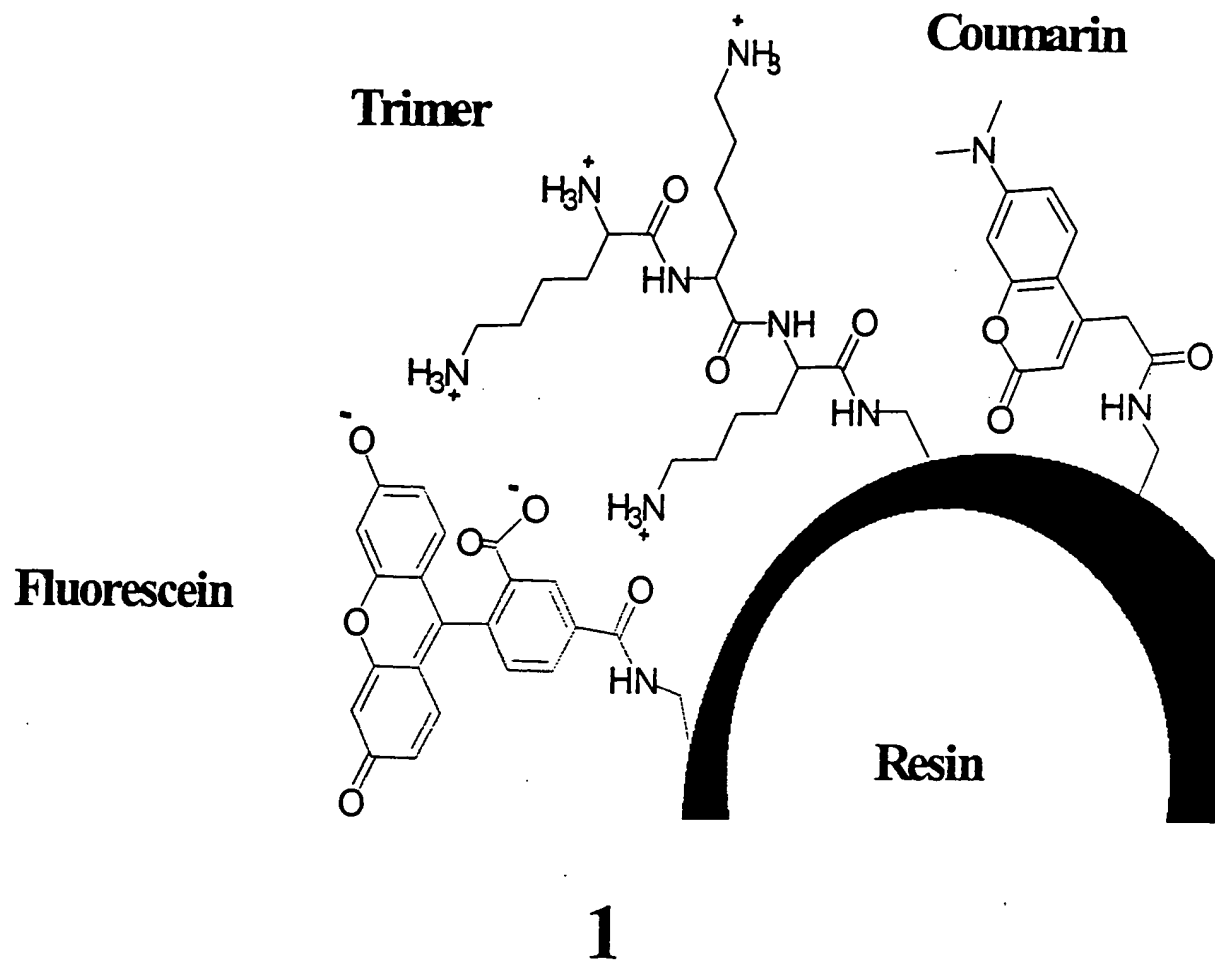


FIG. 56

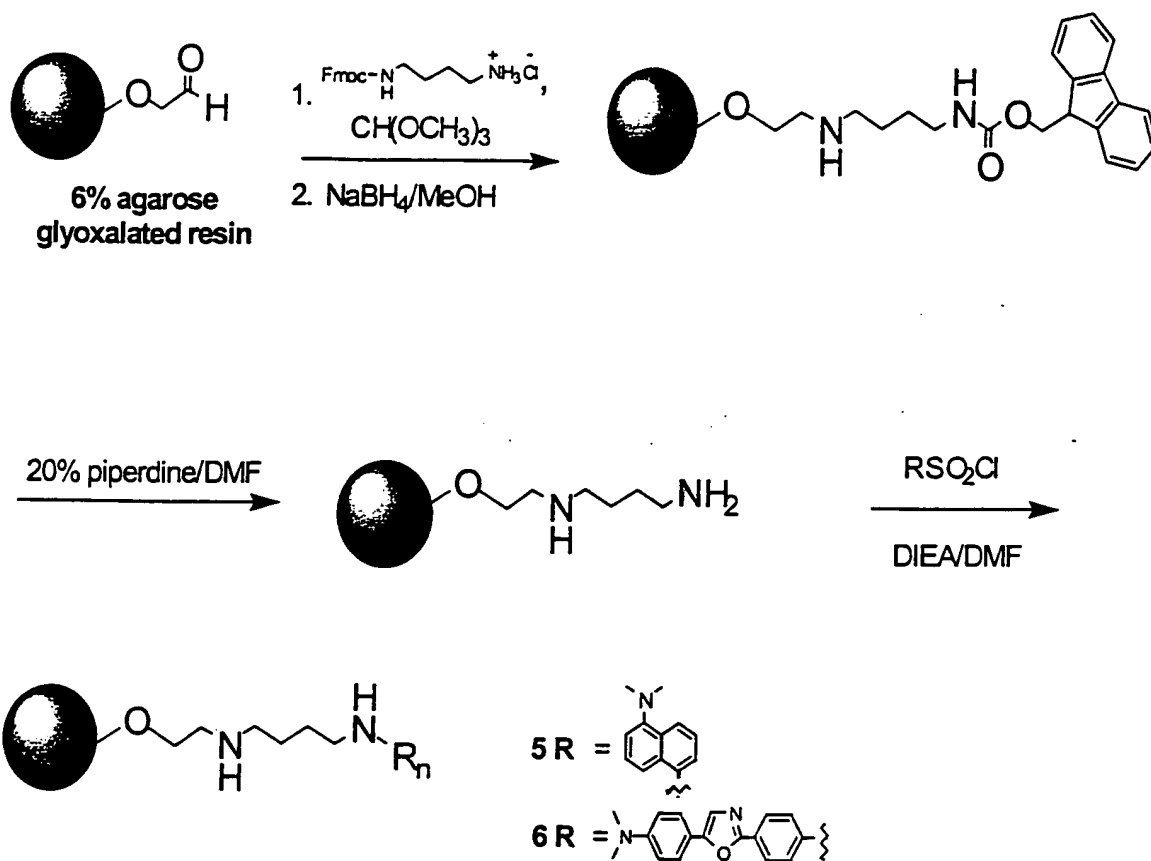


FIG. 57

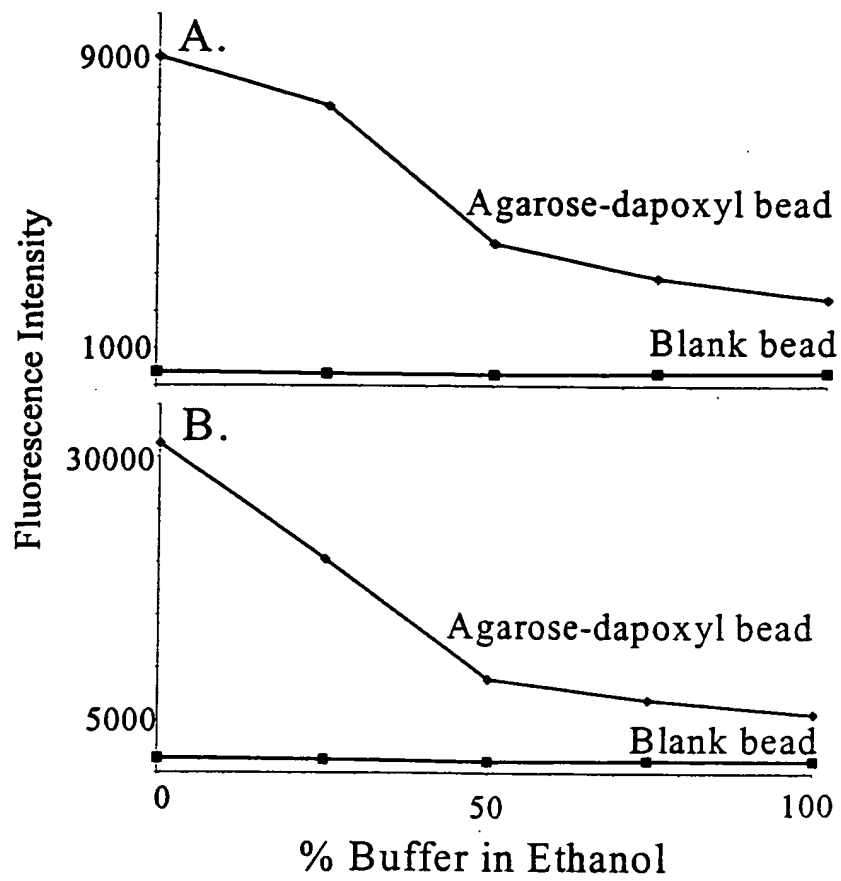


FIG. 58

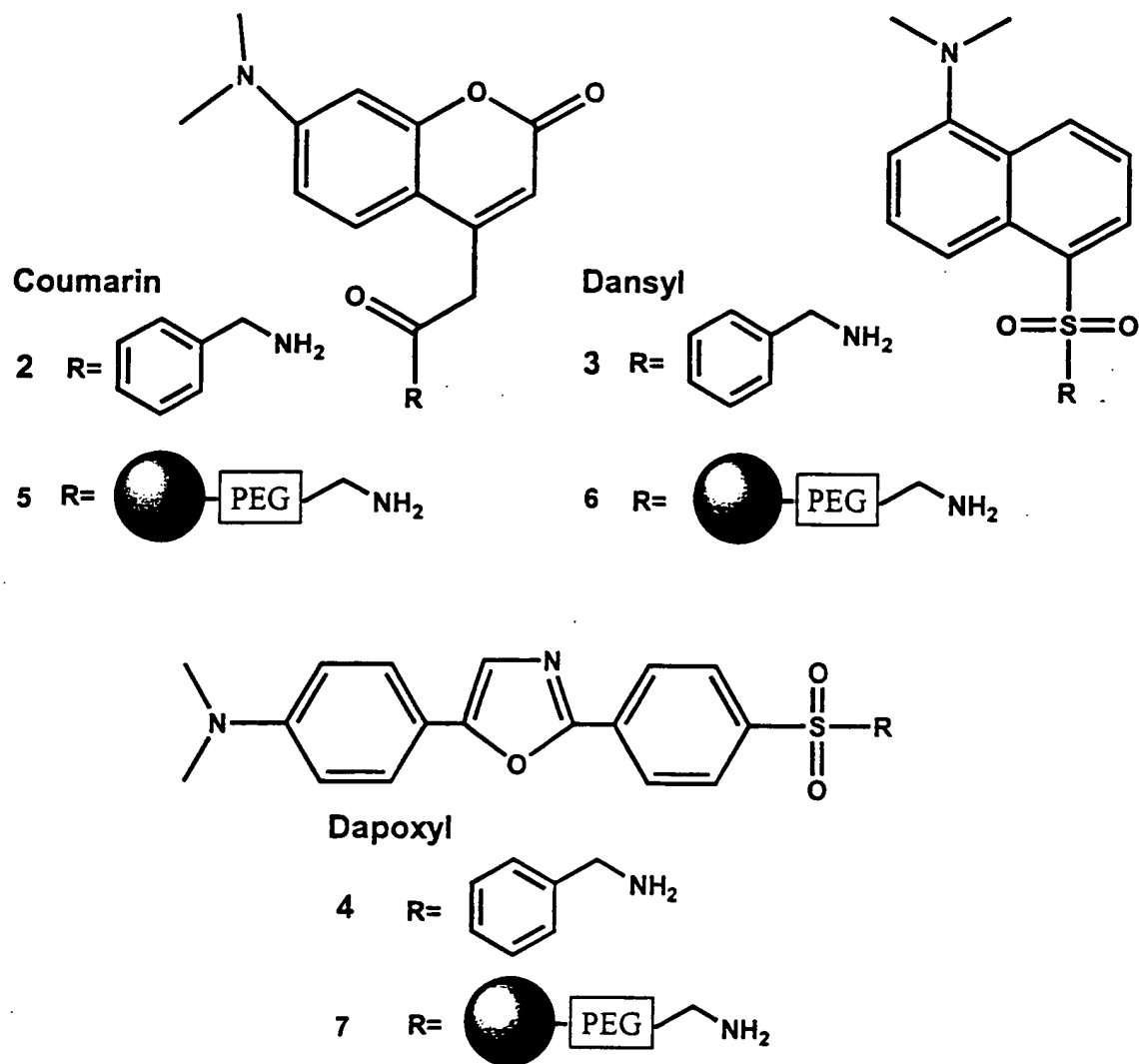


FIG. 59

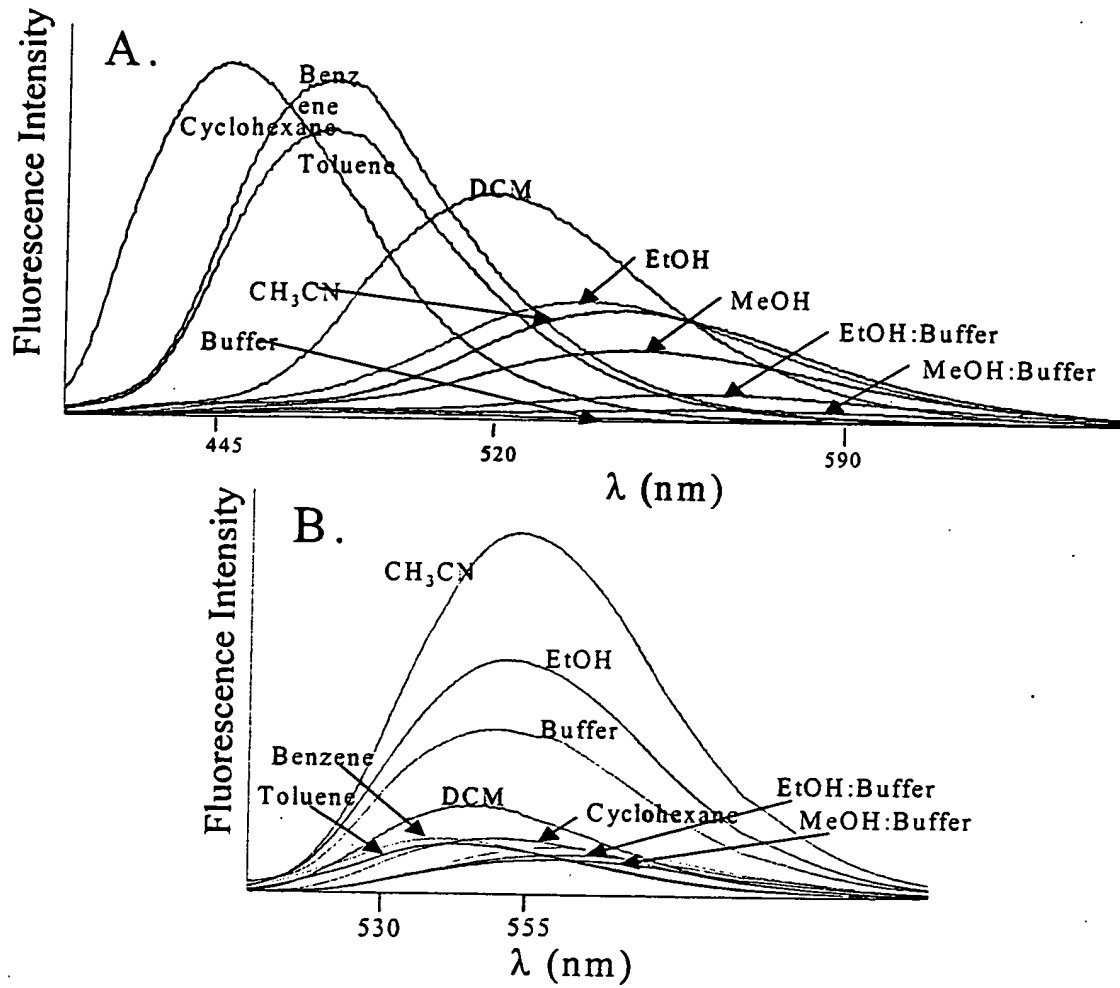
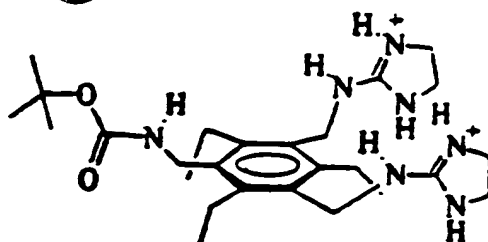


FIG. 60



1

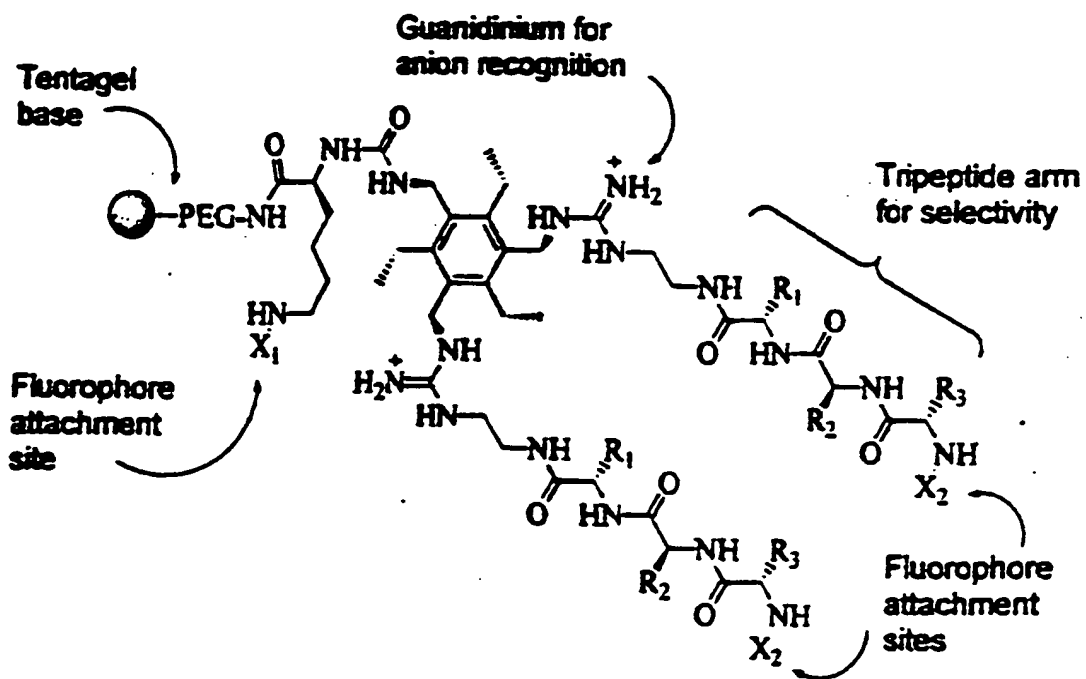
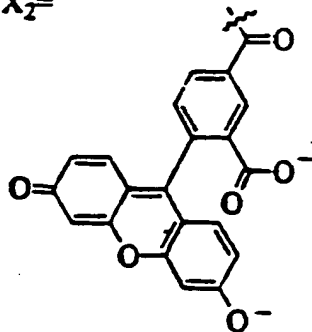
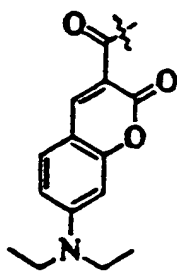
2: $X_1 = X_2 = H$ 3: $X_1 =$ $X_2 =$ 

FIG. 61

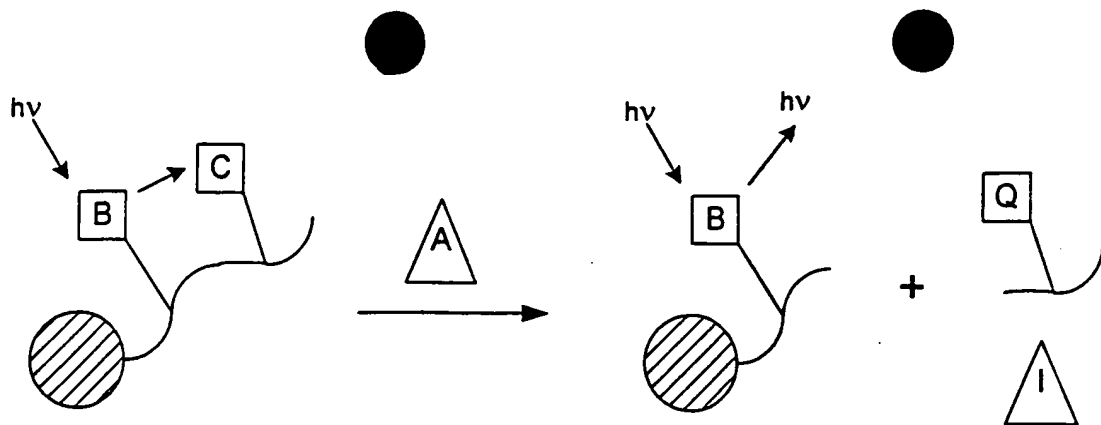


FIG. 62A

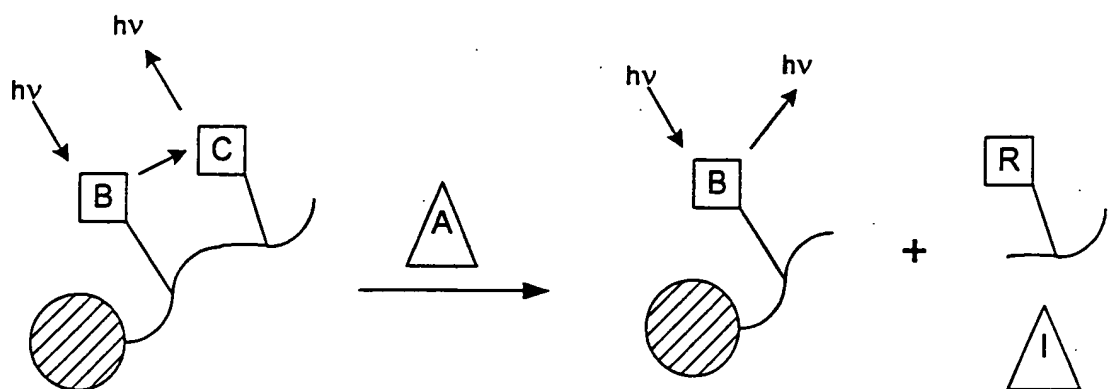


FIG. 62B

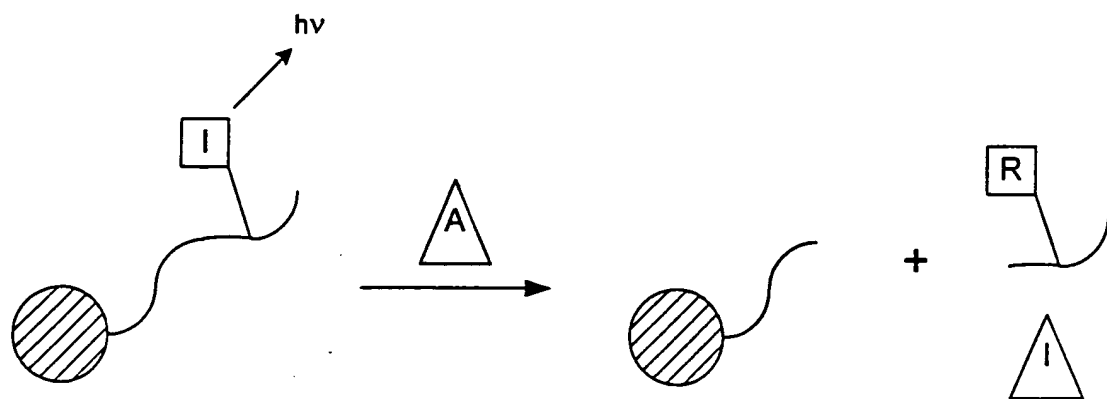


FIG. 62C

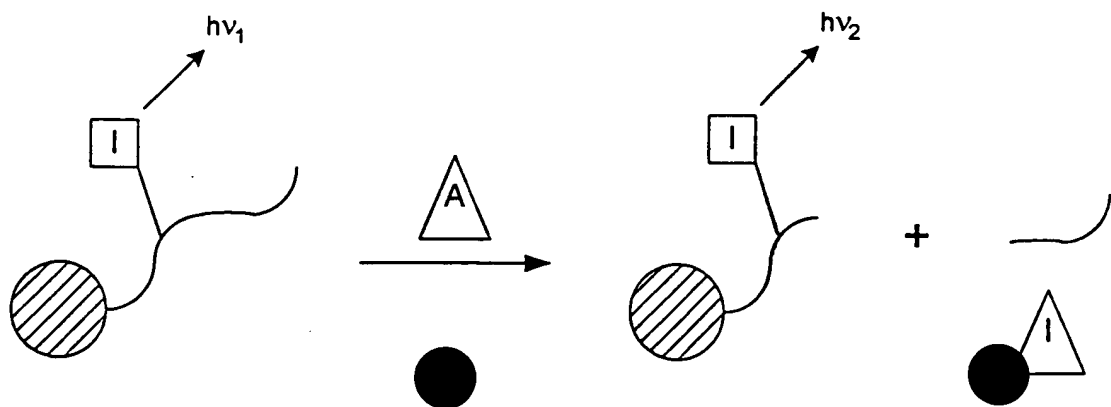


FIG. 62D

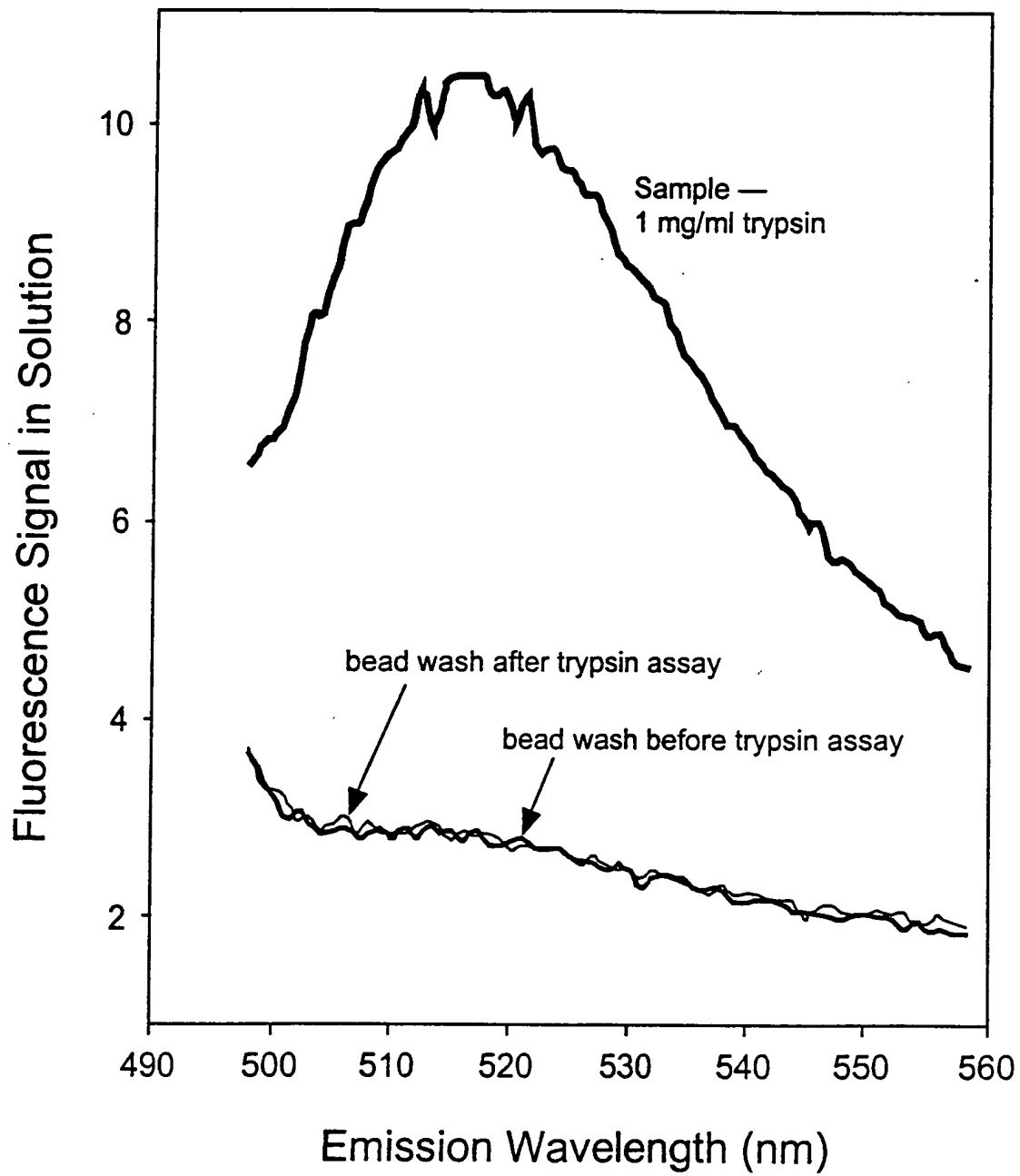


FIG. 63

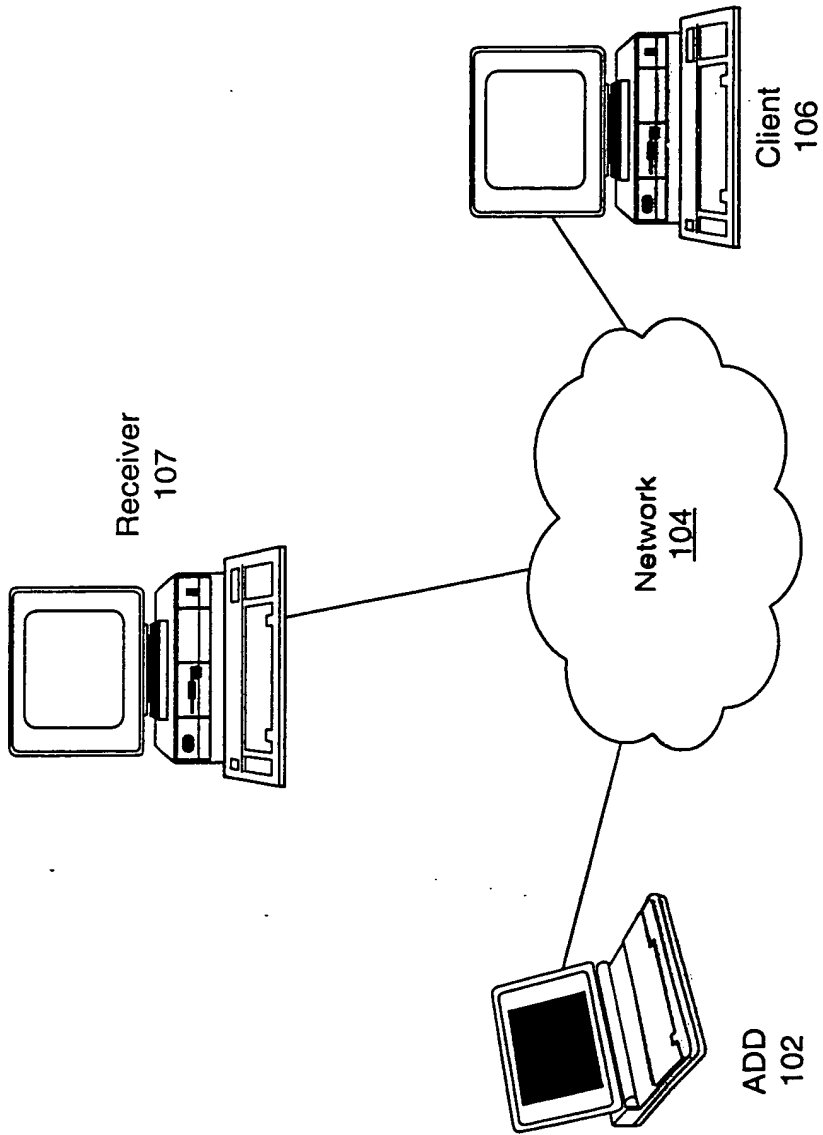


FIG. 64

Collect Chemical Information
Using An Analyte Detection
Device (ADD)

110



Transmit Chemical
Information Over Network To
Client Computer System

114



Optionally Transmit
Response Information Over
Network From Client
Computer System Back to
ADD Or Other Receiving
Computer System

116

FIG. ~~54~~ 65

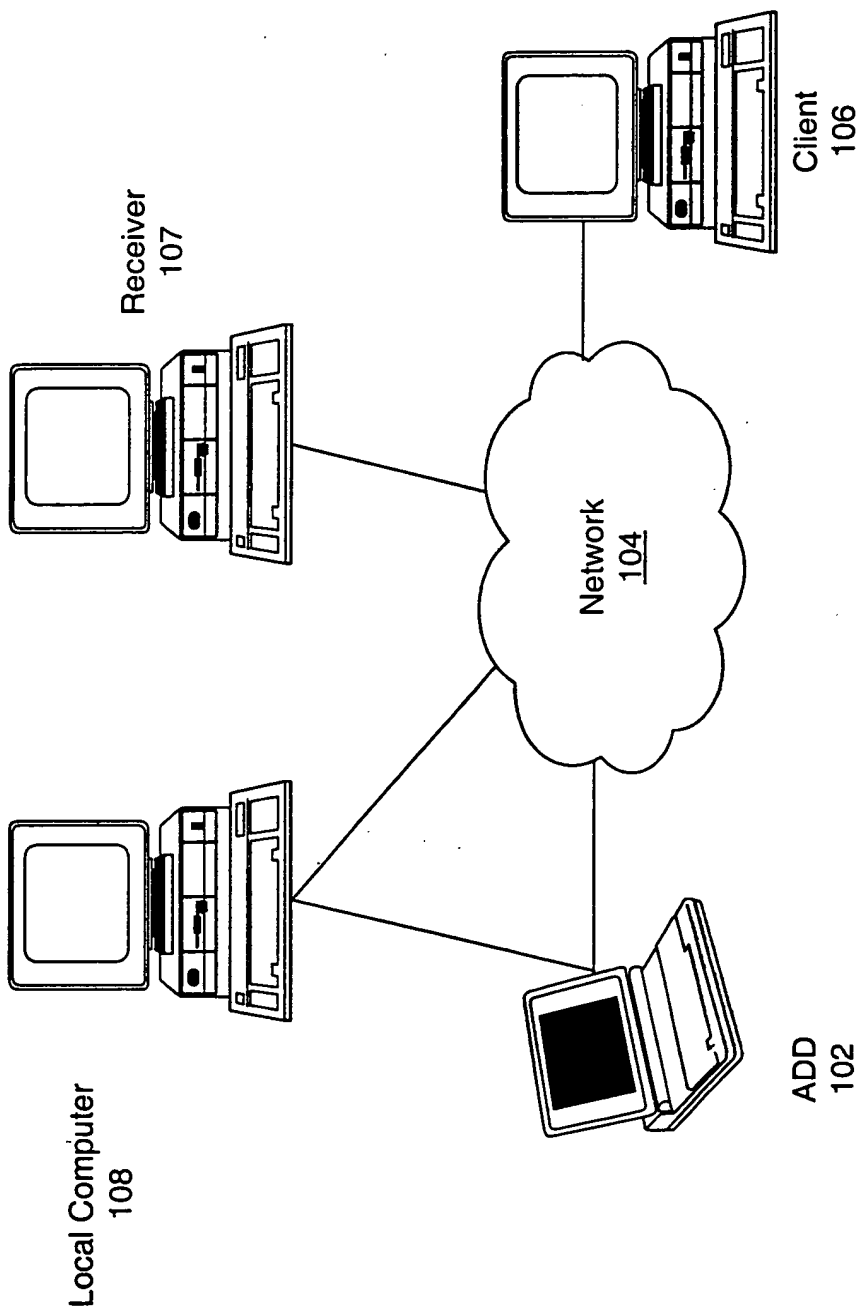


FIG. 66

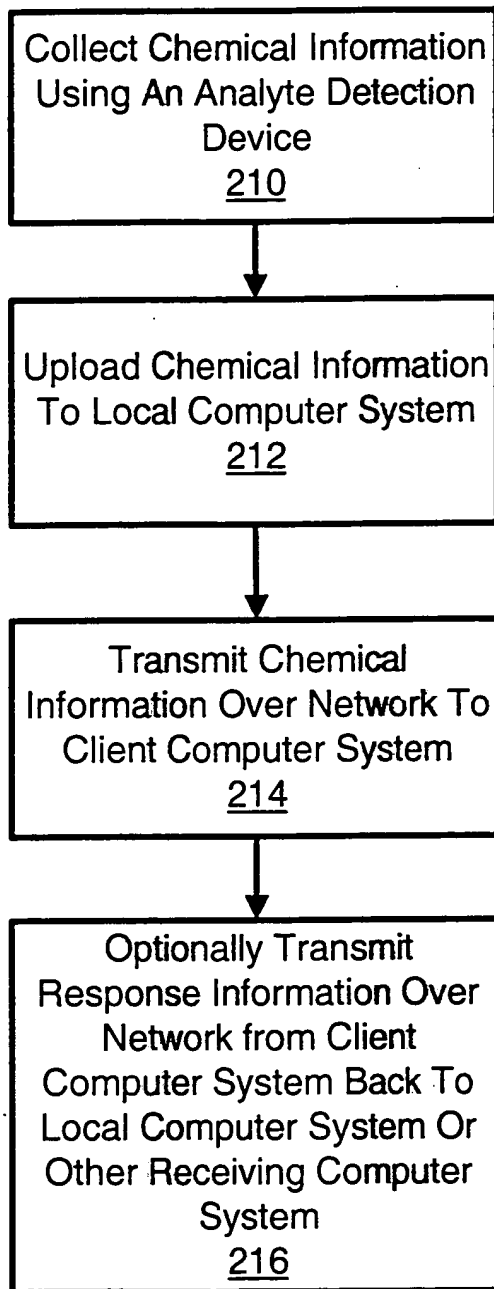


FIG. ~~66~~ 67

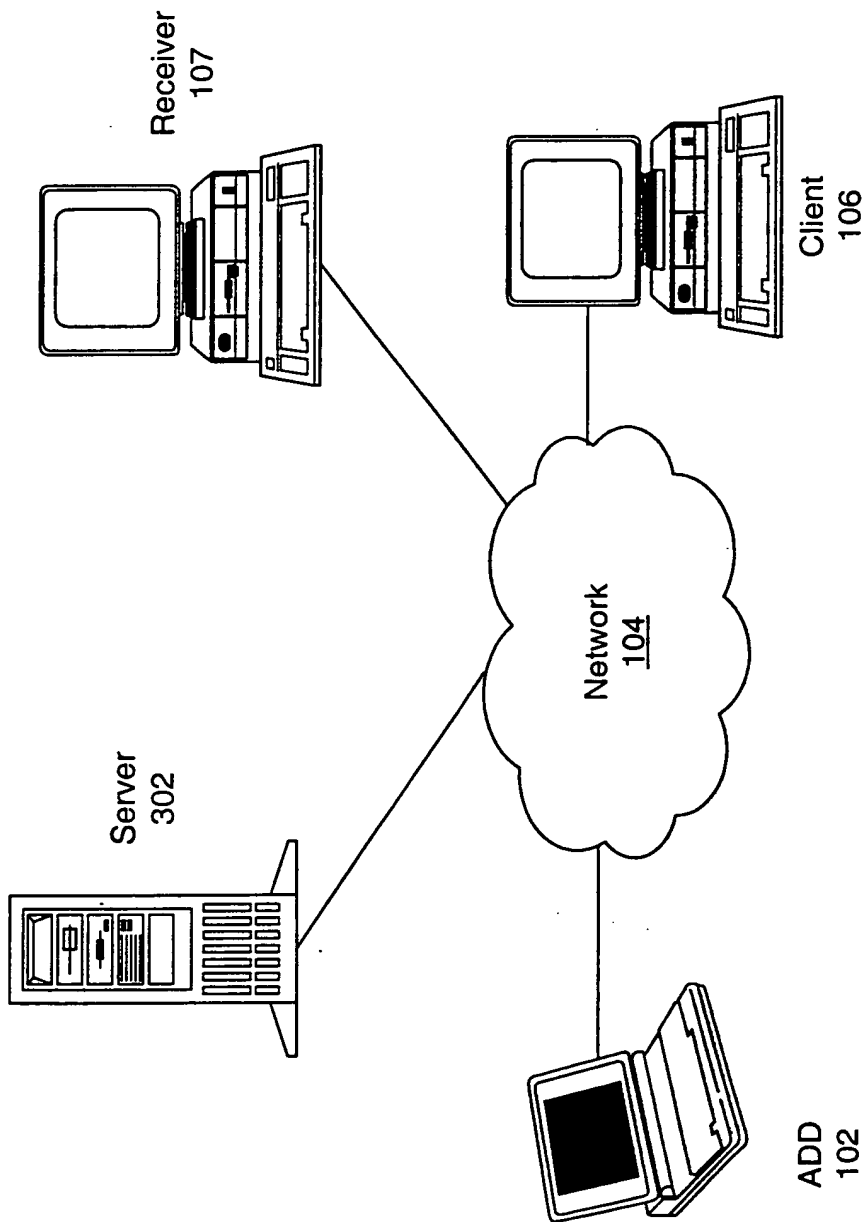


FIG. 68

Collect Chemical Information
Using An Analyte Detection
Device
310



Upload Chemical Information
To Server
312



Client Computer System
Connects to Server Over
Network
314



Server Transmits Chemical
Information to Client
Computer System
316



Optionally Transmit
Response Information Over
Network From Client
Computer System Back To
Server Or Other Receiving
Computer system
318

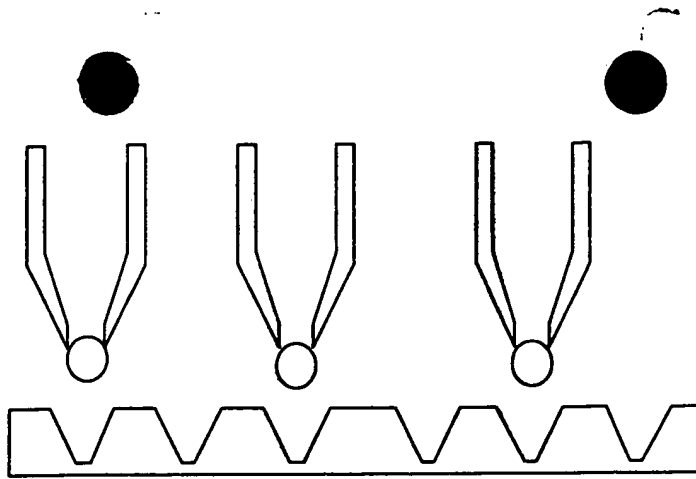


FIG. ~~52A~~ 70A

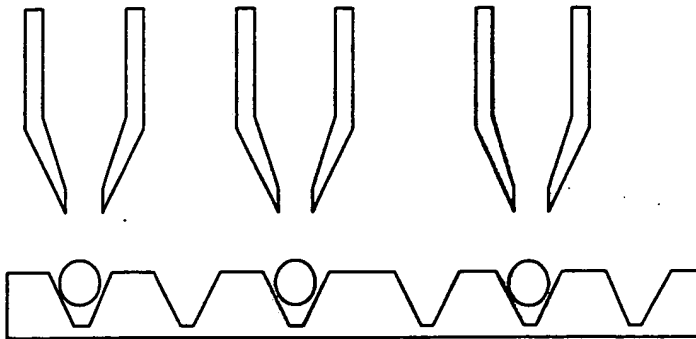


FIG. ~~52B~~ 70B

TOP SECRET

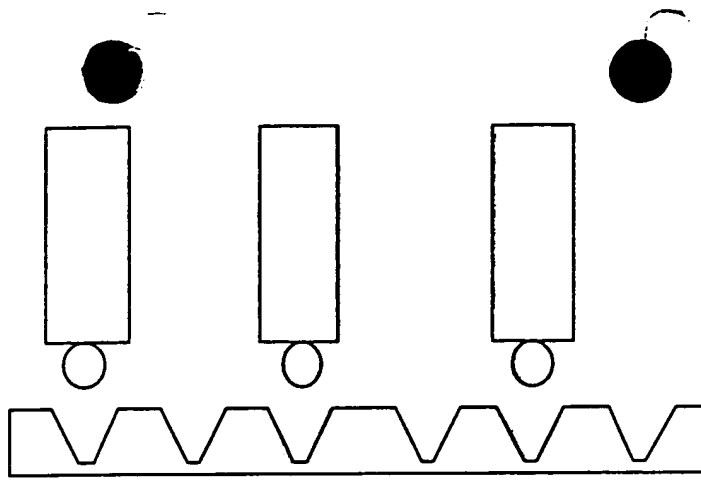


FIG. 58 71A

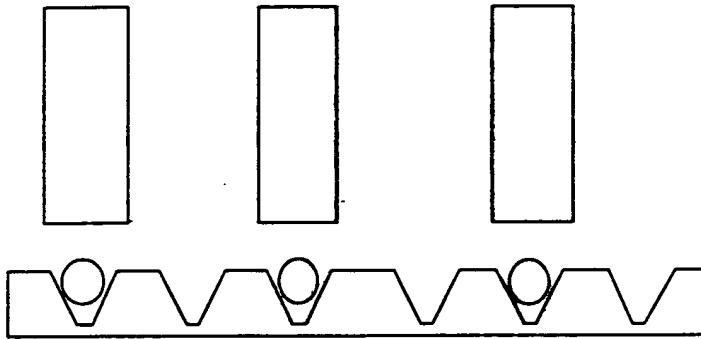


FIG. 59 71B

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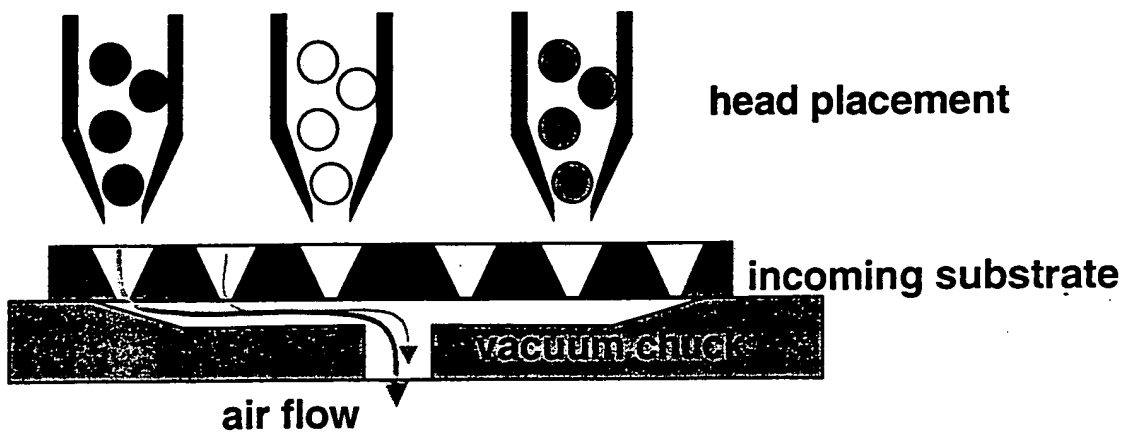


FIG. 72A

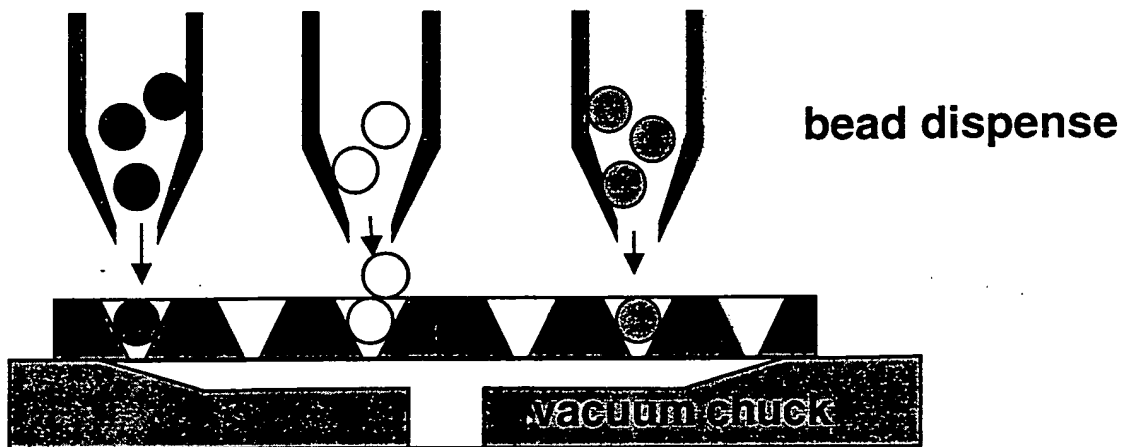


FIG. 72B

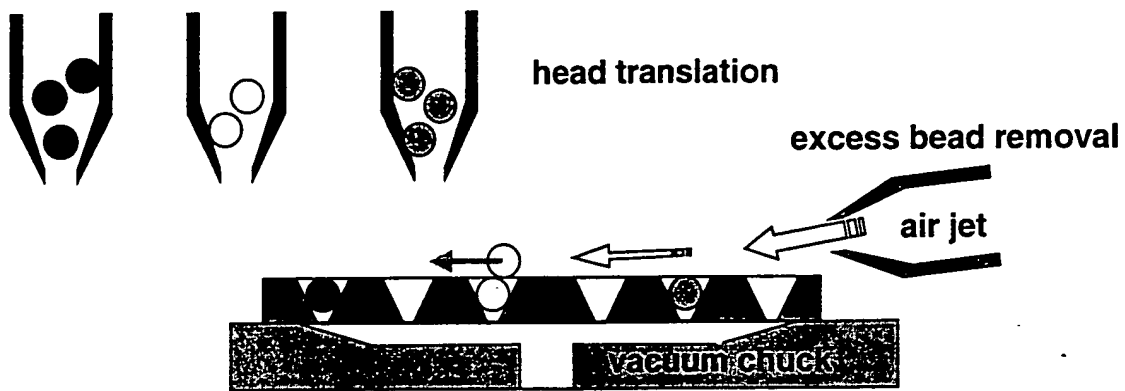


FIG. 592 72C

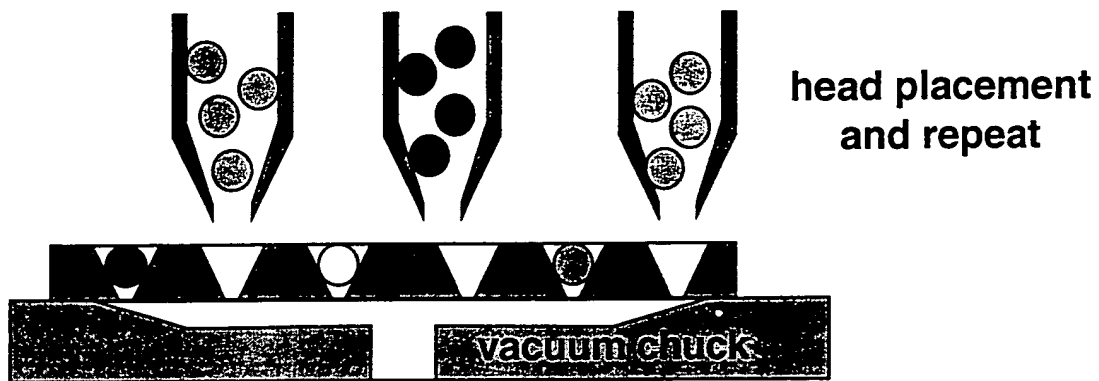
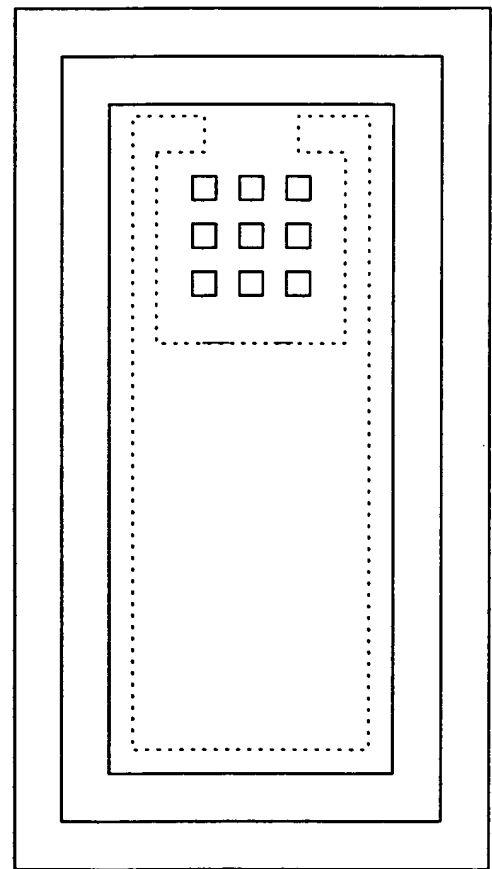
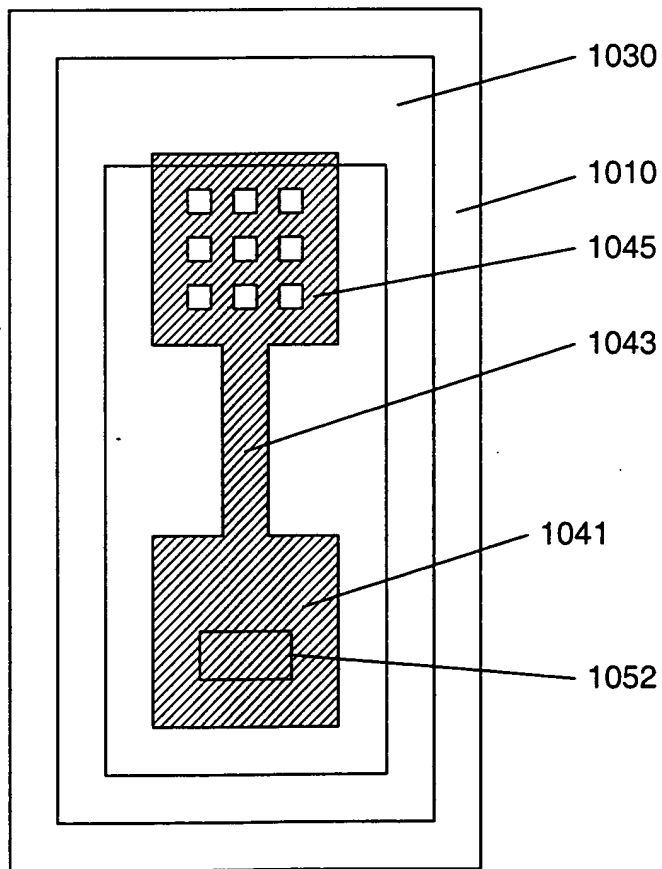
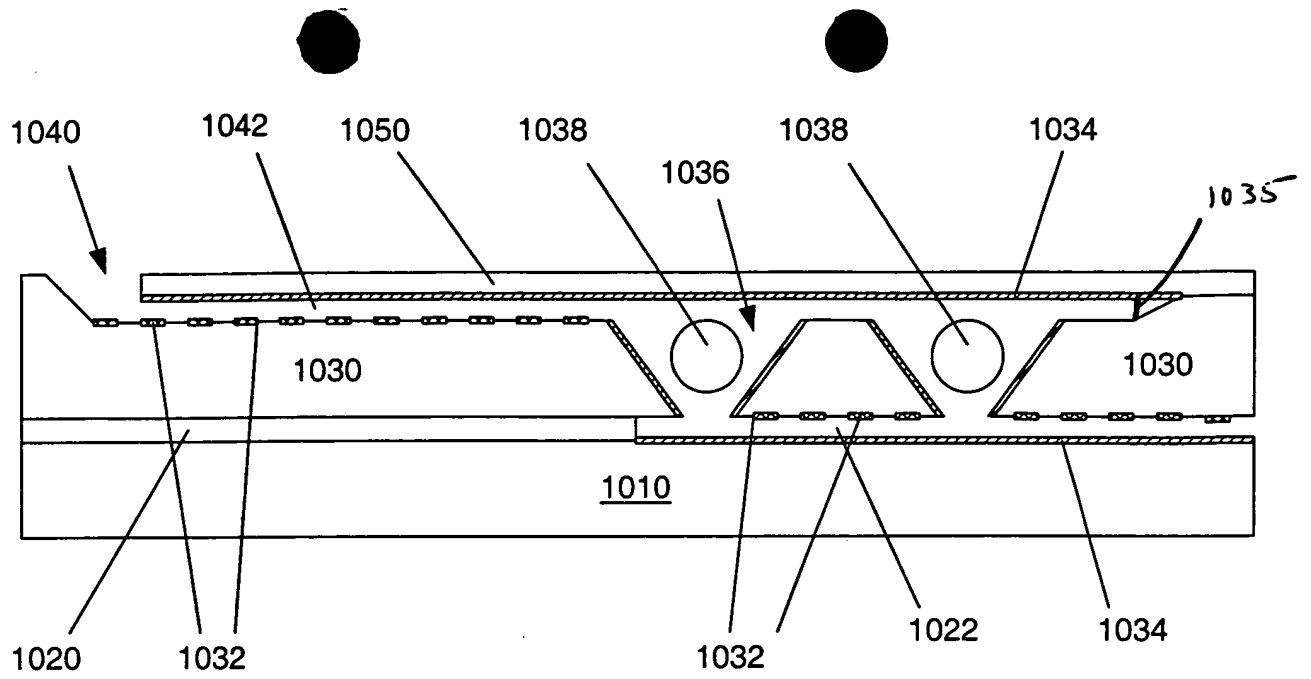


FIG. 592 72D



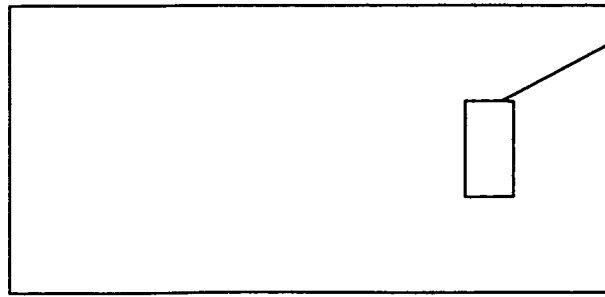


FIG. 50A
75

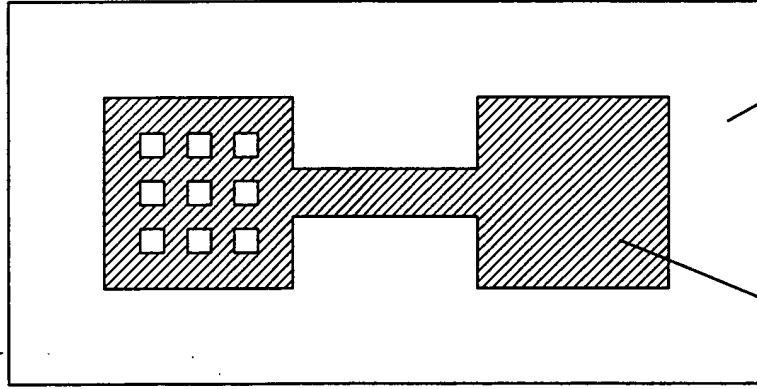


FIG. 50B
75
1031
1033

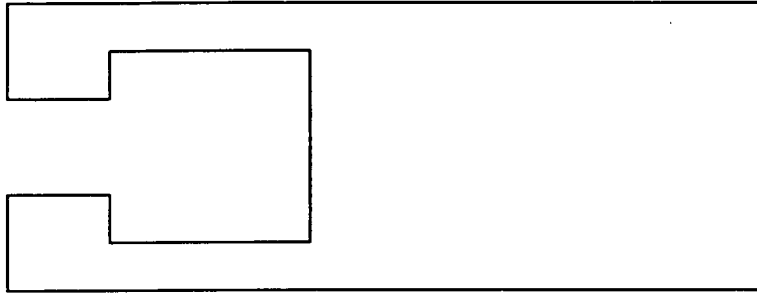


FIG. 50C
75

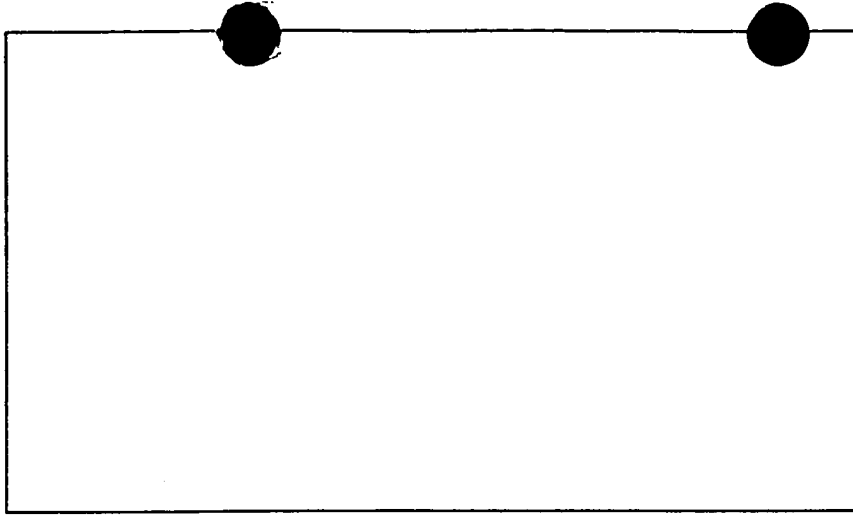


FIG. 50D
75

TOP SECRET

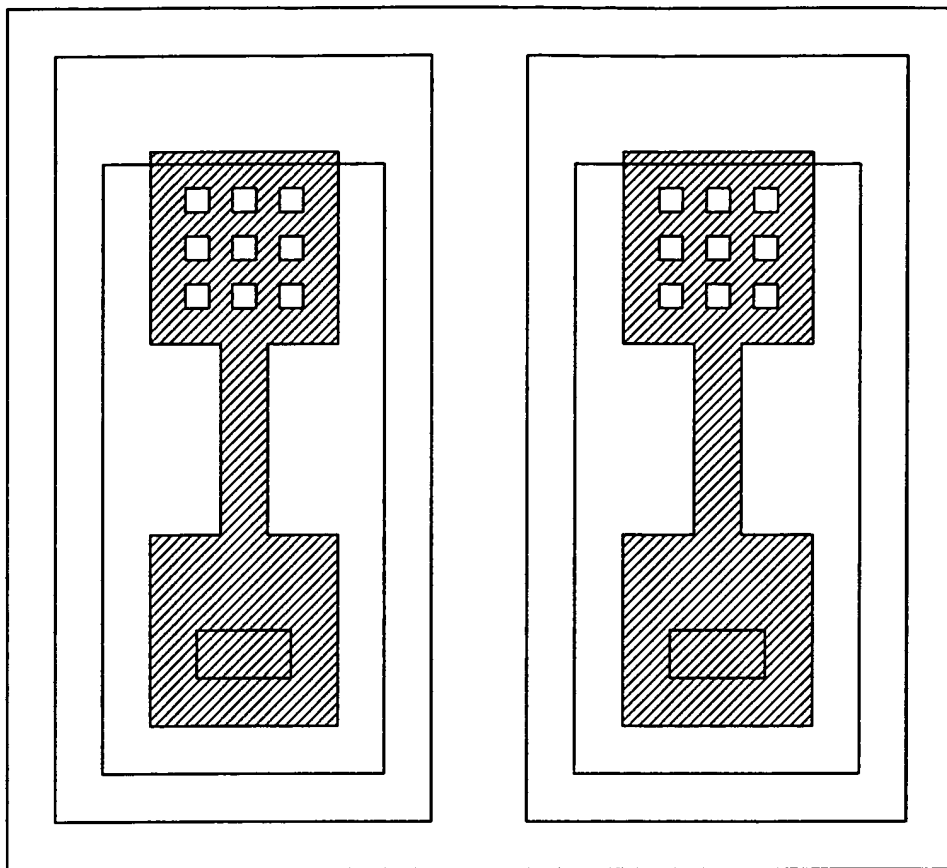


FIG. 76

0201 8901 9901 9901 9901

FIG. 78

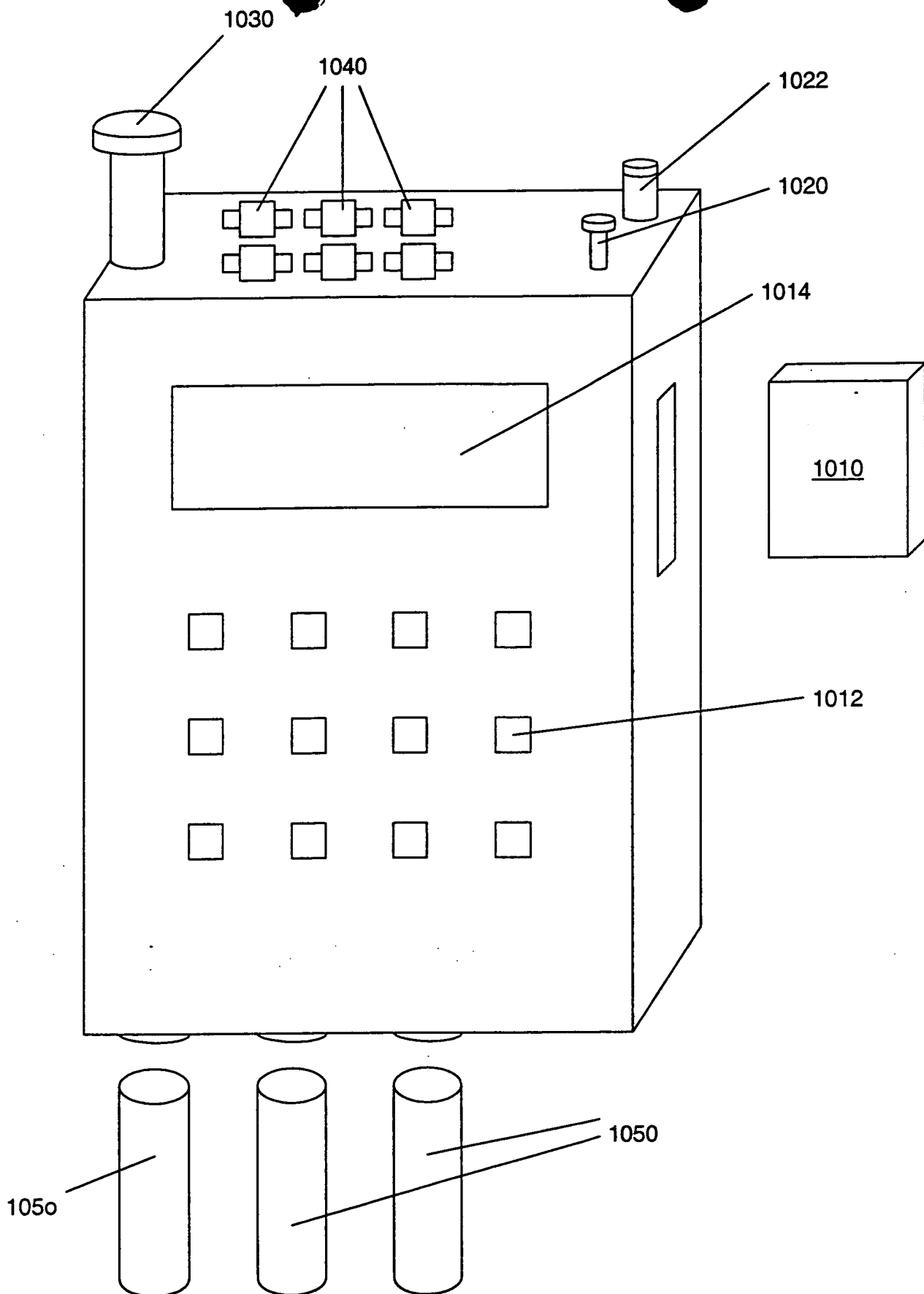


FIG. 78

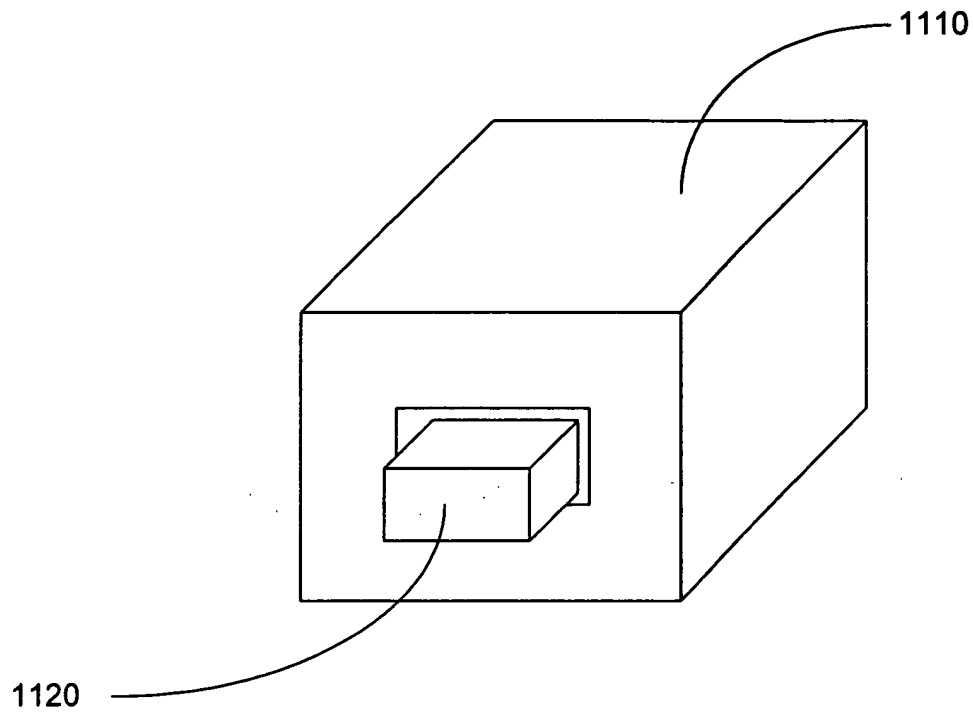


FIG. 79A

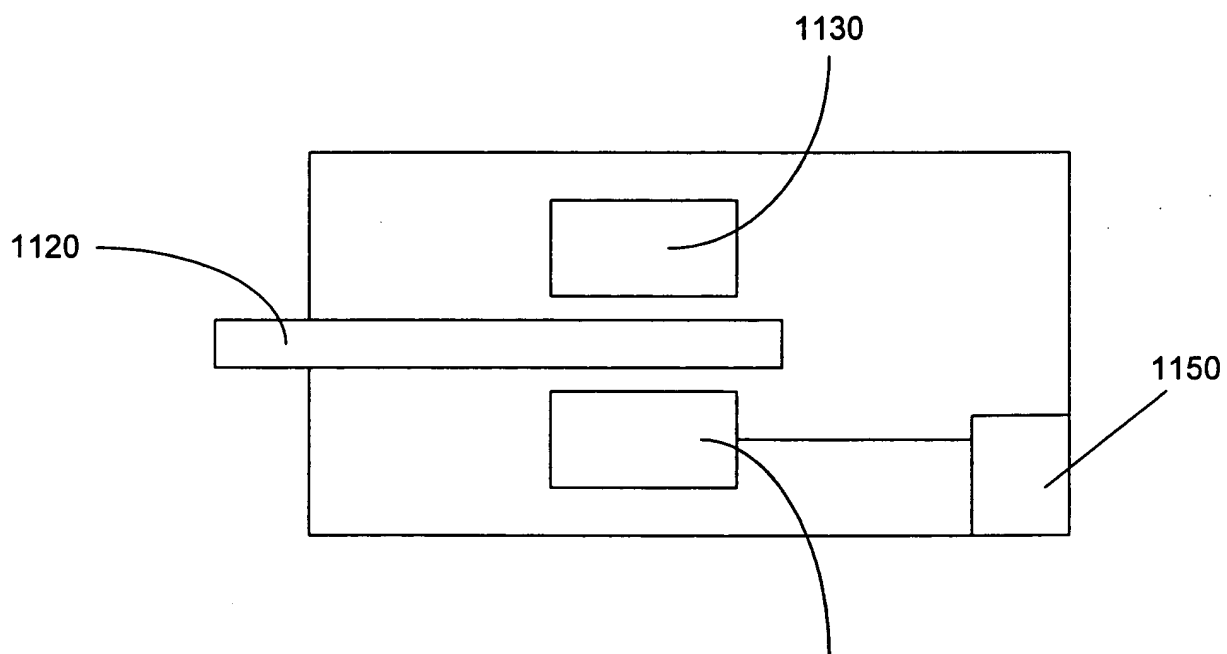


FIG. 79B

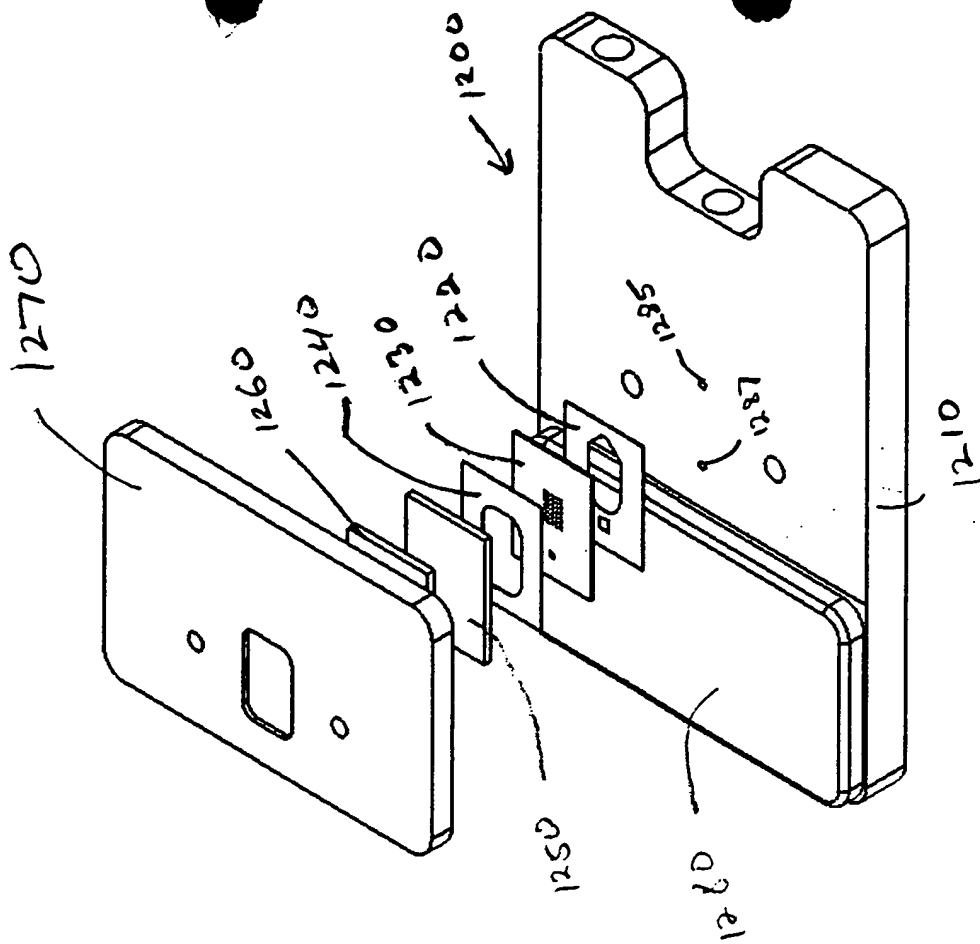


FIG. 80

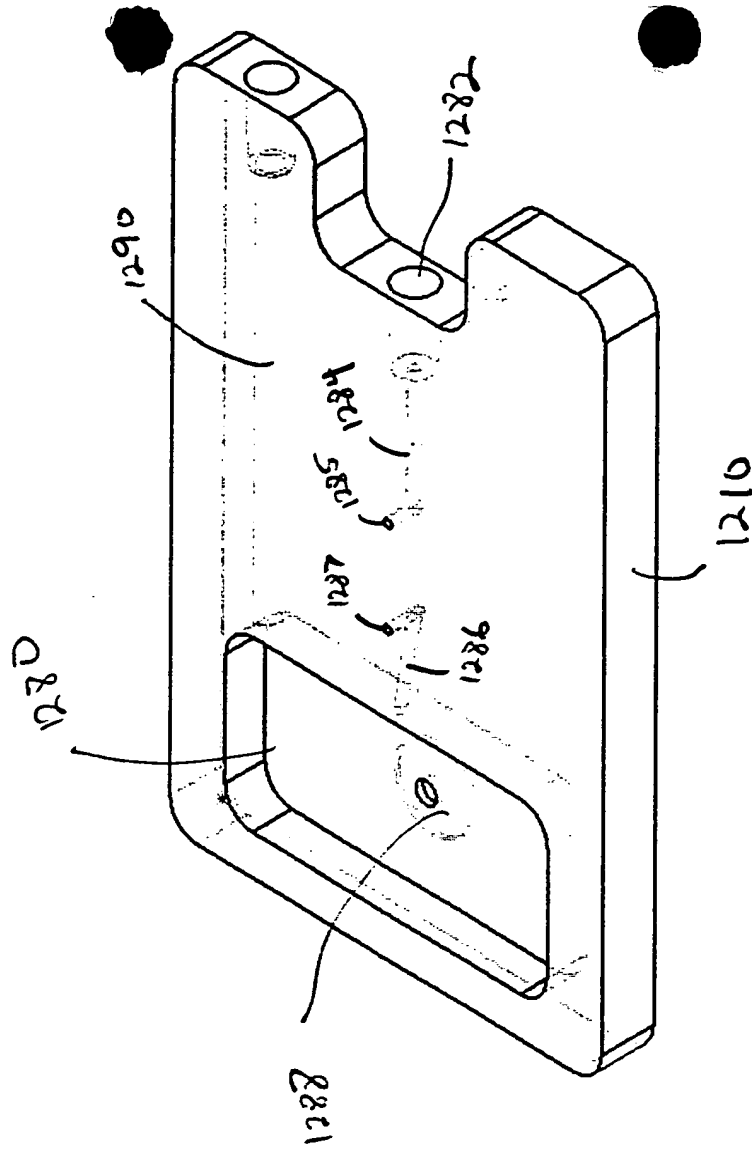
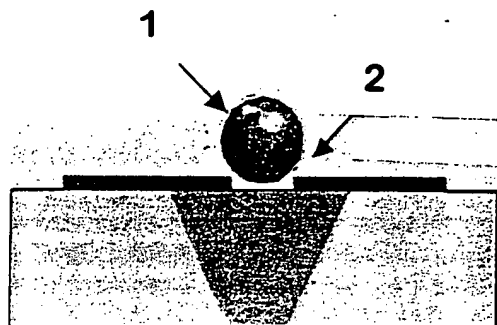
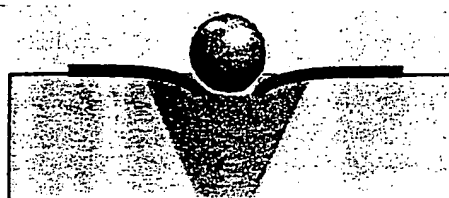


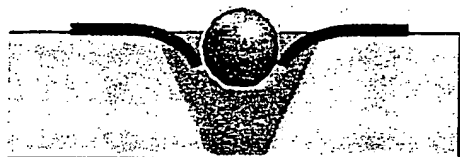
FIG. 81



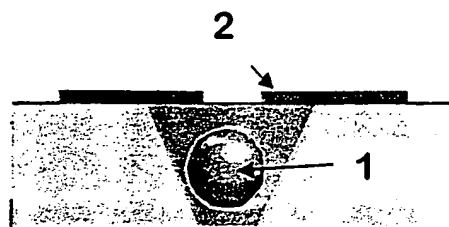
(a)



(b)



(c)



(d)

Figure 182

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